

# Receiving Report

Date:

1/15/16

Batch No:

7130308

Supplier:

B. K. B. Co.

Dart P/O:

26711

Packing Slip:

Yes ☒

No ☐

Invoice:

Yes ☐

No ☒

Receipt:

Cash ☐

Cr ☒

New Supplier

Yes ☒

No ☒

Release Note Attached:

Yes ☒

No ☐

N/A ☐

Waybill Attached:

Yes ☐

No ☒

N/A ☒

Shipment Complete:

Yes ☐

No ☒

N/A ☒

QC18 Inspection

N/A ☒

Work Order

N/A ☐

## Discrepancies

| Part Number | Description | Quantity Ordered | Quantity Rec'd | Quantity Short | Quantity Inspected | Quantity Rejected | Comment / NCR Number |
|-------------|-------------|------------------|----------------|----------------|--------------------|-------------------|----------------------|
|             |             |                  |                |                |                    |                   |                      |
|             |             |                  |                |                |                    |                   |                      |
|             |             |                  |                |                |                    |                   |                      |

Initials of Receiver

QC12

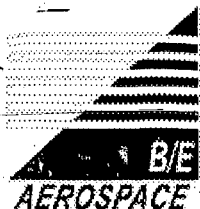
Production/Admin:

Date

Received/Costing

Initial

Location



# B/E Aerospace, Inc.

Page: 1 of 1

## CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO25711**

| LIN# | QUANTITY | U/M | PART-NUMBER | CUST REF# | LOT-NUMBER | MANUFACTURER | CCODE | MFR DATE | EXP DATE |
|------|----------|-----|-------------|-----------|------------|--------------|-------|----------|----------|
| 10   | 600      | EA  | MS21042L5   |           | 45762-000  | MACLEAN-ESNA | 019L2 |          |          |

  
Jason Lewis  
Vice President of Quality

09/11/14

MACLEAN-ESNA  
A MACLEAN-FOGG COMPANY  
POCAHONTAS, ARKANSAS 72455

CERTIFICATE OF QUALITY COMPLIANCE

DATE: 6/9/2014

TO: B/E AEROSPACE  
9835 NW 14TH ST  
MIAMI, FL 33172

ESNA PART NO. M52LF3324-5  
MANUFACTURER'S LOT SIZE 24241 (APPROX. WT. COUNT)  
MANUFACTURED UNDER SHOP ORDER NUMBER 45762 - 000  
ORIGINATED AS SHOP ORDER NUMBER  
CUSTOMER PO #: 0YEW31 PACKING LIST #: 65247  
ESNA ORDER #: 085861 QTY PACKAGED: 24241  
CUSTOMER PART #: MS21042L5

ACCEPTANCE TESTS PER NASM25027

MATERIAL RAW MATERIAL TYPE .343 RD. 4037 WIRE DATE MFG: 01/21/14  
RAW MATERIAL CONFORMS TO AMS 6300 AS EVIDENCED BY THE ATTACHED MILL CERTIFICATION. ESNA SHOP  
ORDER NO. 45762 - 000 MILL HEAT NO. 10172300 VENDOR WIRE TECH

FINISH FINISH TYPE SAE AMS QQ-P-416B, TY II, CL 2; 23HR BAKE  
LUBRICANT TYPE EVERLUB 620C DRY FILM LUBE PER AS5272 TYPE 1

ACCEPTED 23 HR STRESS EMBRITTLEMENT LOADED TO 255 IN LBS. MIN

AXIAL STRENGTH REQUIRED LBS. MINIMUM 10200 ALL SAMPLE PIECES TESTED MEET OR EXCEED  
EXCEEDS LBS. 10500 MINIMUM REQUIREMENTS.

SAMPLE SIZE 10 PIECES.

HARDNESS REQUIRMENT HRC 43-44 IS HRC 43-45

WORKMANSHIP CONFORMS DIMENSIONALLY TO MS21042L5 PER NASM21042 (NEW) STANDARD.  
BEARING SURFACE SQUARENESS AS SPECIFIED PER NASM25027

DISCONTINUITIES

WITHIN LIMITS PER NASM25027

AND MIL-STD-271D/ACN 1/ AND REV E/ NOTICE 2/ AND REV F/ NOTICE 1.

ASTM E 1444 REV 5

MT PER SPEC 725 X

SAMPLE SIZE( MT - PCS): 20

ACCEPTED(PCS): 20

PT PER SPEC 731

SAMPLE SIZE( PT - PCS): 0

ACCEPTED(PCS): N/A

This is to certify that all applicable plating, heat treating, and inspection processing and that all material used in the manufacture of subject parts conform to the specification or drawings received by ESNA and set forth in the subject purchase order; that the parts are of good material and workmanship; and that all necessary records, including chemical and physical where applicable, will be made available for review upon request. The inspection and test reports provided represent the actual attributes of the items furnished on this contract and indicate full compliance with all applicable specification and contract requirements.

This is to certify that the materials supplied against the subject order are free of contamination by presence of mercury.

SIGNATURE

TERESA MELTON, QUALITY ASSURANCE MANAGER  
Brenda Ramsey, Quality Inspector



**WireTech, Inc.**

8440 E. Canning Street  
Los Angeles, CA 90040  
Phone (323) 722-4933  
Fax (323) 721-2738

SOLD TO

Maclean - ESNA  
611 Country Club Road  
Pocahontas, AR 72455  
USA

WORK ORDER  
102864

# CERTIFICATION

HEAT NO.  
10172300  
SALES ORDER / RLS  
852173 / 2  
ISO 9001-2000 REGISTERED



MECHANICAL TESTING  
CERT # 911.01

CERT# 911.01

*Handwritten:* 28245  
25954  
343 4037

|   |                             |                     |                                   |                       |                             |
|---|-----------------------------|---------------------|-----------------------------------|-----------------------|-----------------------------|
| CUSTOMER P.O.<br>25954-00   | CUSTOMER PART<br>0420070343 | QUANTITY<br>521 Lbs | CARRIERS<br>1                     | LADING NO<br>00107992 | SHIPMENT DATE<br>01/21/2014 |
| SPECIFICATION M054037-103430A<br>A-4037, AQ, SKFG, CHQ WIRE, SEAM & DECARB FREE, SAIP Zinc Phosphate, Lime & Stearate Coating,<br>Size:0.342/0.344 Specifications: AMS 6300D, 2301H |                             |                     |                                   |                       |                             |
| CERTIFICATION REQUIREMENTS  |                             |                     |                                   |                       |                             |
| Chemical Properties   |                             |                     |                                   |                       |                             |
| Cu<br>.38   | Si<br>.23                   | Mn<br>.74           | P<br>.009                         | S<br>.009             | Cu .08 Ni .05 Cr .16 Mo .21 |
| Physical Properties   |                             |                     |                                   |                       |                             |
| Grain Size Jominy 1<br>6 J1=55  |                             | Jominy 2<br>J5=35   | Inclusions Macro<br>S2-R1-C2 GOOD | Cleanliness<br>F&S=0  | Mill Source<br>Charter      |
| Country of Origin<br>USA - DFAR Compliant   |                             |                     |                                   |                       |                             |
| Mechanical Properties   |                             |                     |                                   |                       |                             |
| TEST  | UNITS                       | Results             |                                   |                       |                             |
| Tensile Strength  | KSI                         | 73.7                |                                   |                       |                             |
| Yield Strength  | KSI                         | 62.7                |                                   |                       |                             |
| % Elongation  | %                           | 24.5                |                                   |                       |                             |
| % Reduction of Area   | %                           | 72.4                |                                   |                       |                             |
| Rockwell Hardness B Scale   | HRB (s)                     | 82                  |                                   |                       |                             |
| Decarb (Total)  | In                          | 0.00                |                                   |                       |                             |

**45762 - 000**

Merchandise covered by this invoice is warranted to be free from defects in workmanship or material but not for any specific length of time, type or measure of service. No claim for allowance will be recognized unless presented in writing within 10 days time after receipt of material. Our maximum liability for any claim predicated upon defective merchandise is limited to replacement of it, or to repayment of it, or to repayment of the purchase price thereof, as we elect. Material cut to specific length or size cannot be returned for credit and request for cancellation of such orders will not be considered if manufacture has been commenced. Buyer, by acceptance of the merchandise covered by this invoice, agrees to the foregoing terms and conditions and those set forth on the reverse hereof. "The recording of false, fictitious or fraudulent statements or entries on this document may be punished as a felony under Federal statutes including Federal law, Title 18, Chapter 47."

REPRODUCTION OF THIS CERTIFICATION IS NOT ALLOWED UNLESS IN FULL.

Wire Tech, Inc. metallurgical laboratory is accredited in the following test: chemical analysis per ASTM E 415, mechanical testing per ASTM A 370, Rockwell hardness per ASTM E 18, metallographic mount preparation per ASTM E 3, decarburization depth per ASTM E 1077, IFI 140, inclusion rating per ASTM E 45, decarburization performed as per IFI 140.

The reported Chemical and Physical Properties are Melt Source results. Transcribed from mill certificates. HRB(W) are hardness results performed with a 1/16" carbide ball. Unless otherwise specified, HRB and HRC results are conversions from ASTM A370 tables 1 and 2. \*Test result not covered by our current A2LA accreditation. Tests which have been undertaken by a subcontractor laboratory that is not accredited are not endorsed by A2LA or covered by Wire Tech, Inc. A2LA accreditation.

TEST RESULTS RELATE ONLY TO THE ITEMS TESTED.

"LATEST REVISIONS OF ASTM"

DFAR Material per Clauses 252.225-7014 ALT. 1, 252.225-7009, & 225.003(9)

Material is free of mercury, radium, or alpha contamination.

*Handwritten signature*



MAC FASTENERS, INC.  
1110 ENTERPRISE  
OTTAWA, KANSAS 66067

**CERTIFICATE OF CONFORMANCE  
AND  
MANUFACTURER'S AFFIDAVIT**

CUSTOMER: B/E AEROSPACE

PO: OMNM50

PART NUMBER: AN3C12A

REV: 2

LOT NUMBER: 66623

MANUFACTURED QUANTITY: 12,000

MILL HEAT NUMBER: 568732

COUNTRY OF ORIGIN: UNITED STATES OF AMERICA

DFARS 252.225.7009 Compliant

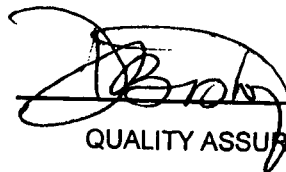
**MERCURY FREE CERTIFICATION**

MacFasteners Inc. certifies that the parts referenced in the above lot number do not contain Mercury or Mercury compounds, and were manufactured in a Mercury free environment.

We certify that the parts furnished against the above referenced purchase order were manufactured by MAC FASTENERS, INC. within the United States, and were processed in accordance with all applicable drawings and specifications.

Objective evidence of compliance is on file, subject to examination upon request.

DATE: 11/08/13



QUALITY ASSURANCE REPRESENTATIVE

MacFasteners, Inc. is an AS9100C Registered Company- SAI GLOBAL - 0058029

MAC FASTENERS, INC.  
1110 EAST ENTERPRISE  
OTTAWA, KS 66067

## CHEMICAL & PHYSICAL TEST REPORT

|                           |                     |                        |                              |
|---------------------------|---------------------|------------------------|------------------------------|
| CUSTOMER<br>B/E AEROSPACE | PO NUMBER<br>0MNM50 | MFG QUANTITY<br>12,000 | DATE<br>11/08/13             |
| PART NUMBER<br>AN3C12A    | REV<br>2            | LOT NO<br>66623        | PROCUREMENT SPEC<br>NASM6812 |

|                      |           |           |           |                                     |    |            |            |                            |    |   |                       |       |    |
|----------------------|-----------|-----------|-----------|-------------------------------------|----|------------|------------|----------------------------|----|---|-----------------------|-------|----|
| MATERIAL<br>TYPE 431 |           |           |           | MATERIAL SPECIFICATION<br>ASTM A493 |    |            |            | MILL HEAT NUMBER<br>568732 |    |   | SUPPLIER<br>CARPENTER |       |    |
| C<br>.16             | SI<br>.49 | Mn<br>.63 | P<br>.017 | S<br>.009                           | Cu | Ni<br>1.56 | Cr<br>16.1 | Mo                         | V  | B | Fe                    | Al    | Ti |
|                      | Co        | N         | Bi        | Pb                                  | Mg | Zn         |            | Nb                         | Sn |   |                       | Other |    |

### MECHANICAL TEST RESULTS - TESTING PER NASM1312

| ULTIMATE TENSILE STRENGTH<br>POUNDS |       |
|-------------------------------------|-------|
| 3,370                               |       |
| 3,360                               |       |
| 3,380                               |       |
| 3,350                               |       |
| 3,370                               |       |
| MIN. REQ.                           | 2,210 |

| DOUBLE SHEAR STRENGTH<br>POUNDS / PSI |       |
|---------------------------------------|-------|
| 4,940                                 |       |
| 4,980                                 |       |
| 4,980                                 |       |
| 4,970                                 |       |
| 4,970                                 |       |
| MIN. REQ.                             | 4,250 |

| HARDNESS           |             |
|--------------------|-------------|
| ROCKWELL "C" SCALE |             |
| REQ.               | 26 - 32 HRC |
| SAMPLE SIZE        | 5           |
| ACTUAL RESULTS     |             |
| 28 - 29 HRC        |             |

| METALLURGICAL EXAMINATION                       |                                     |                                    |  |
|---|-------------------------------------|------------------------------------|--|
| Discontinuities                                 | <input checked="" type="checkbox"/> | Carb/Decarb                        | <input checked="" type="checkbox"/>  |
| Grain Flow                                      | <input checked="" type="checkbox"/> | Microstructure                     | <input checked="" type="checkbox"/>  |
| Grain Size                                      | <input checked="" type="checkbox"/> | Appearance                         | <input checked="" type="checkbox"/>  |
| Thread Inspection<br>FED-STD-H28/20 - ASME B1.3 |                                     | System 21 <input type="checkbox"/> | System 22 <input checked="" type="checkbox"/> System 23 <input type="checkbox"/> |

| NDT/ ADDITIONAL TESTS                            |                                     |
|--|-------------------------------------|
| Magnetic Particle Inspection per<br>ASTM E1444   | <input type="checkbox"/>            |
| Liquid Penetrant Inspection per<br>ASTM E1417    | <input type="checkbox"/>            |
| Recess Torque Test                               | <input type="checkbox"/>            |
| Head Marking                                     | <input checked="" type="checkbox"/> |
| Magnetic Permeability<br>ASTM A342 less than 2.0 | <input type="checkbox"/>            |

### TEST CERTIFICATION

WE CERTIFY THAT THE PART NUMBER, LOT NUMBER, AND SAMPLES REFERENCED ABOVE HAVE BEEN TESTED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATION FOR THE TESTS REPORTED HEREIN. THIS CERTIFICATION SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE APPROVAL OF MAC FASTENERS, INC.

  
Quality Assurance Representative

AS9100C REGISTERED  
SAI GLOBAL - 0058029

MAC FASTENERS, INC.  
1110 ENTERPRISE  
OTTAWA, KANSAS 66067

## HEAT TREAT CERTIFICATION

CUSTOMER: B/E AEROSPACE

DATE: 11/08/13

PO NUMBER: OMNM50

MANUFACTURED QUANTITY: 12,000

PROCESSOR:

PAULO PRODUCTS KCMO - NADCAP ID 4679

LOT NUMBER: 66623

MATERIAL: TYPE 431

PART NUMBER: AN3C12A

REVISION: 2

REQUIRED HARDNESS: 26 - 32 HRC

SAMPLE SIZE: 5

HARDNESS: 28 - 29 HRC

HEAT TREAT SPECIFICATION AS APPLICABLE: MIL-H-6875/AMS-H-6875/AMS2759/AMS5853/PS-1001

Notes:

The fasteners referenced in this report have been processed, inspected and certified by the Heat Treat Contractor in accordance with all applicable drawings and specifications. Heat Treatment has been verified in accordance with procurement specification and part drawing, by metallurgical and mechanical testing as applicable. Evidence of compliance as well as certification from the Heat Treat Contractor is on file and subject to examination upon request.

  
QUALITY ASSURANCE REPRESENTATIVE

MacFasteners, Inc. is an AS9100C Registered Company - SAI GLOBAL - 0058029

# DE TRAY Plating Works

Specialized Electro-Plating and Polishing  
Nickel  
Copper  
Decorative Chrome  
Satin Chrome  
Zinc  
Cadmium  
Passivate  
Bright Dip  
Strip Copper  
Descale

10405 EAST ELEVENTH STREET • INDEPENDENCE, MISSOURI 64052  
Phone (816) 252-8411 Fax (816) 252-8527 • E-mail: DeTrayPlating@Aol.com

Passivate Treatment per QQ-P-35C/SAE AMS QQ-P-35/AMS 2700

CUSTOMER: Mac Fasteners Lot#: 66623  
PART NUMBER: AN3C12A  
PROCUREMENT SPECIFICATION: n/a  
OTHER CONTRACTURAL REQUIREMENTS:  
MATERIAL: 431  
QUANTITY: 174 lbs  
INVOICE NUMBER: 174270

#### Certification Statement:

We certify that the above referenced lot was processed, tested, and inspected in accordance with QQ-P-35C/SAE AMS-QQ-P-35, AMS2700 and part standard.

DE TRAY PLATING WORKS

NAME: James V. Wilson

JOB TITLE: VICE-PRESIDENT

DATE: 11/06/2013

**CERTIFICATE OF TESTS**
**ABNAHMEPRUEFZEUGNIS**
**CERTIFICAT DE CONTROLE**
**CERT SERIAL# 000883248**

**CARPENTER**

 Carpenter Technology Corporation  
 101 West Bern Street, Reading, Pa. 19601  
 Tel: (610) 208-2000 (800) 338-4592

- THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FEDERAL STATUTES INCLUDING FEDERAL LAW, TITLE 18, CHAPTER 47.
- THE VALUES AND OTHER TECHNICAL DATA REPRESENT THE RESULTS OF ANALYSES AND TESTS MADE ON SAMPLES COLLECTED FROM THE TOTAL LOT. ORIGINAL DATA RECORDS CAN BE TRACED BY REFERENCE TO THE CARPENTER ORDER NUMBER.
- MATERIAL IS MANUFACTURED FREE FROM MERCURY, RADIUM, ALPHA AND GAMMA SOURCE CONTAMINATION.
- THIS DOCUMENT SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN CONSENT OF CARPENTER TECHNOLOGY CORPORATION.

**08/20/13**
**CUSTOMER/BESTELLER/CLIENT**
**SELLER/VERKÄUFER/VENDEUR PAGE 1 OF 1**
**MAC FASTENERS INC**
**1110 E. ENTERPRISE  
OTTAWA KS 66067**
**BOL**

| CUSTOMER ORDER NO./BESTELL-NR./N° DE COMMANDE | CARPENTER NO./WERKS-NR./N° DE REFERENCE INTERNE | DATE/DATUM/DATE | WEIGHT/GEWICHT/POIDS |
|---|---|-----------------|----------------------|
| 79757   | W71792  | 08/20/13        | 999.000              |

**HEAT NUMBER / SCHMELZE-NR. / N° DE COULEE : 568732**
**PRODUCT DESCRIPTION: TYPE 431 COLD FINISH SEAM FREE ANNEALED C HDG CL K1 HVY  
----- CU TENSILE MAX 100.0 KSI**
**SPECIFICATION: ASTM-A493-09  
-----**
**SIZE 0.187500 IN. ( 4.76 MM) RD WIRE**
**PRIMARY HEAT CHEMISTRY(WT%): (TEST METHOD IS SHOWN IN PARENTHESIS)**

|                |                |                |                |                |                |
|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>C (COM)</b> | <b>MN(XRF)</b> | <b>SI(XRF)</b> | <b>P (XRF)</b> | <b>S (COM)</b> | <b>CR(XRF)</b> |
| 0.16           | 0.63           | 0.49           | 0.017          | 0.009          | 16.1           |
| <b>NI(XRF)</b> |                |                |                |                |                |
| 1.56           |                |                |                |                |                |

**TENSILE AS SHIPPED, KSI(MPA) 98.5( 679)**

MATERIAL HAS BEEN MELTED AND MANUFACTURED IN THE USA WHICH IS A QUALIFYING COUNTRY TO DFARS REQUIREMENTS 252.225-7014 WITH ALTERNATE 1 FOR QUALIFYING COUNTRY 225.872.1, SUPERSEDED BY DFARS REQUIREMENTS DFARS 252.225-7008 AND 252.225-7009.

THIS ORDER WAS MANUFACTURED IN ACCORDANCE WITH CARPENTER SPECIALTY ALLOYS OPERATIONS QUALITY PROGRAM MANUAL, REVISION 30 DATED 09/28/11.

CARPENTER'S QUALITY MANAGEMENT SYSTEM WAS REGISTERED AS OF NOVEMBER 24, 2010 TO THE REQUIREMENTS OF ISO 9001:2008 APPROVAL CERTIFICATE 10-1385R BY PERFORMANCE REVIEW INSTITUTE. THIS CERTIFICATE OF TEST IS TYPE 3.1 PREPARED IN ACCORDANCE WITH EN 10204 (DIN 50049). WE HEREBY CERTIFY THAT THE ABOVE TEST DATA ARE IN ACCORDANCE WITH THE PURCHASE ORDER AND SPECIFICATION REQUIREMENTS, AS DOCUMENTED IN THIS CERTIFICATE OF TESTS.

TEST METHODS ARE PER THE ASTM STANDARDS ON FILE AND IN EFFECT AT TIME OF ORDER ACCEPTANCE, STANDARD PRACTICES, OR AS AGREED UPON BETWEEN CARPENTER & CUSTOMER.

**GARY BROWN**  
**MANAGER - SPECIFICATIONS/CERTIFICATIONS**  
**CARPENTER TECHNOLOGY CORPORATION**

This certification is made to the customer printed on this form. Carpenter neither makes, nor assumes responsibility for, any representation or certification to other parties.  
 Die vorliegende Zertifizierung ist nur für den in diesem Formular genannten Kunden gültig. Carpenter übernimmt gegenüber Dritten keinerlei Haftung für die ausgewiesenen Daten oder Zertifizierungen.  
 Ce certificat est uniquement valable pour le client dont le nom est imprimé sur ce formulaire. Carpenter n'assume pas de responsabilité pour une certification vis-à-vis d'une tierce personne.



# B/E Aerospace, Inc.

Page: 1 of 1

## CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO25711**

| LNE# | QUANTITY | U/M | PART-NUMBER | CUST REF# | LOT-NUMBER | MANUFACTURER    | CCODE | EFF DTE | EXP DATE |
|------|----------|-----|-------------|-----------|------------|-----------------|-------|---------|----------|
| 22   | 20       | EA  | NAS77C6-017 |           | 127934-1   | FITZ MFG. (FMI) | 05DT8 |         |          |

  
Jason Lewis  
Vice President of Quality

09/11/14

# FMI

## FITZ MANUFACTURING IND.

Manufacturers of Precision Aerospace Components  
6625 Iron Horse Blvd. • North Richland Hills, TX 76180  
Phone (817) 281-8816 • Fax (817) 498-6974



Packing Slip  
10:20 am - 29021

B  
I  
L  
L

UFC AEROSPACE CORP.  
PO BOX 250

BAY SHORE. NY 11706

S  
H  
I  
P

UFC AEROSPACE CORP.  
25 DREXEL DR.

BAY SHORE. NY 11706

| PACKING SLIP | SHIPPED    | REPORT         |          |                |
|--------------|------------|----------------|----------|----------------|
| 145263-1     | 04/14/2008 | 1% 10th Net 30 | PUR01EMR | COLLECT GROUND |

|     |     |     |  |
|-----|-----|-----|--|
| 001 | 250 | 250 | NAS77C6-017<br>Test Reports Full<br>Qty: 250<br>FMI Lot# 127934-1<br><br><div style="text-align: right;">Rev.11</div><br><div style="text-align: center;">APR 18 2008</div><br><div style="display: flex; justify-content: space-between;"> <div> <input checked="" type="checkbox"/> Mfg C of C<br/> <input type="checkbox"/> FAI<br/> <input checked="" type="checkbox"/> Chem &amp; Phys<br/> <input checked="" type="checkbox"/> Finish Certs<br/> <input checked="" type="checkbox"/> Heat Treat Certs<br/> <input type="checkbox"/> NDT<br/> <input type="checkbox"/> Mercury         </div> <div> <input type="checkbox"/> Pulled<br/> <input type="checkbox"/> Bagged<br/> <input type="checkbox"/> Test Reports Y N<br/> <input type="checkbox"/> Boxed<br/> <input type="checkbox"/> Shipped         </div> </div> |
|-----|-----|-----|--|



# FMI

## FITZ MANUFACTURING IND.

Manufacturers of Precision Aerospace Components  
6625 Iron Horse Blvd. • North Richland Hills, TX 76180  
Phone (817) 281-8816 • Fax (817) 498-6974



Packing Slip  
10:20 am - 29021

UFC AEROSPACE CORP.  
PO BOX 250

BAY SHORE, NY 11706

UFC AEROSPACE CORP.  
25 DREXEL DR.

BAY SHORE, NY 11706

| PACKING SLIP | SHIPPED    | TERMS          | PURCHASE ORDER | SHIP VIA       |
|--------------|------------|----------------|----------------|----------------|
| 145263-1     | 04/14/2008 | 1% 10th Net 30 | PUR01EMR       | COLLECT GROUND |

| LINE | ORDERED | SHIPPED | PART NUMBER   | UNIT PRICE  | EXT |
|------|---------|---------|---|---|-----|
| 001  | 250     | 250     | NAS77C6-017<br>Test Reports Full<br>Qty: 250 FMI Lot# 127934-1  |   |     |
|      |         |         | <input checked="" type="checkbox"/> Mfg C of C<br><input type="checkbox"/> FAI<br><input checked="" type="checkbox"/> Chem & Phys<br><input checked="" type="checkbox"/> Finish Certs<br><input checked="" type="checkbox"/> Heat Treat Certs<br><input type="checkbox"/> NDT<br><input type="checkbox"/> Mercury | <input type="checkbox"/> Pulled<br><input type="checkbox"/> Bagged<br><input type="checkbox"/> Test Reports Y N<br><input type="checkbox"/> Boxed<br><input type="checkbox"/> Shipped |     |

### Certificate of Conformance

FMI certifies that the materials, processes and parts furnished in this shipment were produced in accordance with all applicable drawing specifications and purchase order requirements. Inspection and/or test reports indicating conformance are on file and available for examination. All claims for error, shortage, or damage must be made within 10 days after receipt of goods. No goods to be returned without FMI issued Return Authorization Number (RMA). We do not assume financial responsibility or liability from the use of products sold, other than the replacement value of products sold.

CF 801-3 REV.2 02-01-08

CERTIFICATION

*Claire P. Sabater*

Authorized Signature



4005376-1-5-3032



# CERTIFICATE OF TEST

Page 01 of 02

Certification Date  
24-JUL-2006

## CUSTOMER ORDER NUMBER

4005376-1

EARLE M. JORGENSEN COMPANY  
2030 WEST COMMERCE STREET  
P.O. BOX 655025  
DALLAS TX 75208

## Invoice Number

T560448

## CUSTOMER PART NUMBER

510513

SOLD TO: FITZ MANUFACTURING INC

4212 MC LEAN  
FT WORTH TX 76117

SHIP TO:

FITZ MANUFACTURING INC

4212 MC LEAN  
FORT WORTH TX 76117

Description: 17-4 SOL ANN CF BAR  
5/8 RD X 12' R/L  
HEAT: G11957

ITEM: 510513

ASTM A564  
Line Total: 1010.5364 FT

## Specifications:

AMS 5643 Q  
ASTM A 484 05A  
EN 10204 3.1.B

ASTM A564 T630 04  
AMS 2303 E

ASME SA564 T630 04  
AMS 2315 E

## CHEMICAL ANALYSIS

| C     | MN    | SI   | P     | S     | CR   | NI   | MO   |
|-------|-------|------|-------|-------|------|------|------|
| 0.028 | 0.79  | 0.38 | 0.025 | 0.023 | 15.2 | 4.33 | 0.42 |
| CU    | N     | CB   | TA    | CBTA  |      |      |      |
| 3.7   | 0.027 | 0.24 | 0.01  | 0.25  |      |      |      |

RCPT: R784475

MILL: TALLEY METALS TECHNOLOGY

COUNTRY OF ORIGIN: USA

## MECHANICAL PROPERTIES

| DESCRIPTION | YLD STR        | ULT TEN        | %ELONG             | %RED<br>IN AREA | HARDNESS<br>BHN |
|-------------|----------------|----------------|--------------------|-----------------|-----------------|
| COND A      |                |                |                    |                 | 321             |
| DESCRIPTION | YLD STR<br>KSI | ULT TEN<br>KSI | %ELONG<br>IN 02 IN | %RED<br>IN AREA | HARDNESS<br>BHN |
| DEV: H900 L | 211.0          | 216.0          | 11.0               | 45.0            | 424             |

File  
These Test Reports Apply To:  
Mat. P.O. # 4005376-1  
M # 127934-1  
By/Date 7/26/06 AB

The above data were transcribed from the manufacturer's Certificate of Test after verification for completeness and specification requirements of the information on the certificate. All test results remain on file subject to examination.

We hereby certify that the material covered by this report will meet the applicable requirements described herein, including any specification forming a part of the description.

The willful recording of false, fictitious, or fraudulent statements in connection with test results may be punishable as a felony under federal statutes.

Material did not come in contact with mercury while in our possession.

MICHAEL BOSCH

*Michael Bosch*

MANAGER, QUALITY ASSURANCE





# CERTIFICATE OF TEST

Page 02 of 02

Certification Date  
24-JUL-2006

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HEAT: G11957

ITEM: 510513

ASTM A564  
Line Total: 1010.5364 FT

NO WELD REPAIR PERFORMED ON MATERIAL  
THERMAL TREATMENT: OK  
SOL ANN 1900F 1 HR RAPID COOL  
MACRO: OK  
MICRO1: OK  
AMS NO :2303  
SEVERITY :0.0  
FREQUENCY:0.0

## COMMENTS

DFARS COMPLIANT  
FERRITE LESS THAN 1.00%

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Material did not come in contact with mercury while in our possession.

MICHAEL BOSCH

MANAGER, QUALITY ASSURANCE



CERTIFICATE OF TESTS  
CERT SERIAL# 000553205



**TALLEY METALS**  
A Carpenter Company

Talley Metals Technology, Inc.  
P.O. Box 2498  
Hartsville, SC 29551 Tel 843.335.7544 Fax 843.335.4405

06/20/06

CUSTOMER / KUNSTLER / CLIENT

EMJ COMPANY  
1900 MITCHELL BLVD  
SCHAUMBURG, IL 60193

ABNAHMEPRUEFZEUGNIS

CERTIFICAT DE CONTROL

2784475

\* THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR OMISSIONS ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FEDERAL STATUTES INCLUDING 18 U.S.C. 1001.  
\* THE VALUES AND OTHER TECHNICAL DATA REPRESENT THE RESULTS OF ANALYSIS AND TESTS MADE ON SAMPLES COLLECTED FROM THE TOTAL LOT. ORIGINAL DATA RECORDS CAN BE TRACED BY REFERENCE TO THE CARPENTER ORDER NUMBER.  
\* MATERIAL IS GUARANTEED FREE FROM MERCURY, RADIUM, ALPHA AND GAMMA SOURCE CONTAMINATION.  
\* THIS DOCUMENT SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN CONSENT OF CARPENTER TECHNOLOGY CORPORATION.

2784455  
SELLER / VERKÄUFER / VENDEUR PAGE 1 OF 2

TALLEY METALS TECH, INC.

ACCOUNTS PAYABLE  
P. O. BOX 2498  
HARTSVILLE, SC 29551

| CUSTOMER ORDER NO. / BESTELL-NR. / N° DE COMMANDE | CARPENTER NO. / WERKS-NR. / N° DE REFERENCE INTERNE | DATE / DATUM / DATE | WEIGHT / GEWICHT / POIDS |
|---|---|---------------------|--------------------------|
| P903179-423-6                                     | TLY106604 L15747                                    | 06/20/06            | 9780.006                 |

HEAT NUMBER / SCHMIEZEZEICHNUNG / N° DE COULEE: G11957

PRODUCT DESCRIPTION: TYPE 17-4 SOLUTION ANNEALED COLD FINISH

SPECIFICATION: TALLEY 174-T1A CAP OF H900 (01/11/99)  
AMS 2303 REV E (10/ /01)  
AMS 2315 (REAFFIRMED) REV E (04/ /06)  
AMS 5643 REV Q (01/ /03) (EXCEPT CD ROUND CHEM & MECH PROPS ONLY)  
ASTM-A484-05A  
ASTM-A564-04  
ASME-SA564 2004 EDITION

SIZE 0.625000 IN. ( 15.87 MM) RD BAR

PRIMARY HEAT CHEMISTRY(WT%): (TEST METHOD IS SHOWN IN PARENTHESIS)

|         |         |         |         |         |         |
|---------|---------|---------|---------|---------|---------|
| C (COM) | MN(XRF) | SI(XRF) | P (XRF) | S (COM) | CR(XRF) |
| 0.028   | 0.79    | 0.38    | 0.025   | 0.023   | 15.20   |
| NI(XRF) | MO(XRF) | CU(XRF) | N (FUS) | CB(XRF) | TA(XRF) |
| 4.33    | 0.42    | 3.70    | 0.027   | 0.24    | LT .01  |
| CB+TA   |         |         |         |         |         |
| 0.25    |         |         |         |         |         |

THIS HEAT MELTED BY THE ARC/AOD PROCESSES  
CONTACT THERMOCOUPLES WERE USED TO DETERMINE LOAD TEMPERATURE.  
THIS MATERIAL WAS MANUFACTURED IN ACCORDANCE WITH CARPENTER SPECIALTY ALLOYS  
OPERATIONS QUALITY PROGRAM MANUAL REVISION 26, DATED 5/06.

DISCS MACROETCHED AND APPROVED

HARDNESS AS SHIPPED, HB

321

(MIDRADIUS)

MAGNETIC PARTICLES: FREQUENCY = 0 / SEVERITY = 0

MICROSTRUCTURE - FERRITE

1.00%

SOLUTION ANNEALED 1900 F - 1 HOUR - RAPID COOL

CONTINUED ON NEXT PAGE

This certification is made to the customer (purchaser) on the form. Carpenter makes no warranty, representation or certification to other parties.  
Die vorstehende Zertifikatsausfertigung ist nur für den in diesem Formular genannten Kunden gültig. Carpenter übernimmt keinerlei Haftung für die Lieferanten und andere Dritte.  
Ce certificat est uniquement valable pour le client dont le nom est inscrit sur ce formulaire. Carpenter n'assume pas de responsabilité pour une certification vis-à-vis d'une tierce personne.



**CERTIFICATE OF TESTS**  
CERT SERIAL# 000553205



**TALLEY METALS**  
A Carpenter Company

Talley Metals Technology, Inc.  
P.O. Box 2498  
Hartsville, SC 29551 Tel. 843.335.7570 Fax 843.335.6465

06/20/06

CUSTOMER/RESIDENT/CLIENT

EMJ COMPANY  
1900 MITCHELL BLVD  
SCHAUMBURG, IL 60193

**ABNAHMEPRUEFZEUGNIS**

**CERTIFICAT DE CONTROL**

- THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FEDERAL STATUTES INCLUDING FEDERAL LAW, TITLE 18, CHAPTER 47.
- THE VALUES AND OTHER TECHNICAL DATA REPRESENT THE RESULTS OF ANALYSIS AND TESTS MADE ON SAMPLES COLLECTED FROM THE TOTAL LOT. ORIGINAL DATA RECORDS CAN BE TRACED BY REFERENCE TO THE CARPENTER ORDER NUMBER.
- MATERIAL IS MANUFACTURED FREE FROM MERCURY, RADIUM, ALPHA AND GAMMA SOURCE CONTAMINATION.
- THIS DOCUMENT SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN CONSENT OF CARPENTER TECHNOLOGY CORPORATION.

SPELLER/VERKAUFER/VENDEUR PAGE 2 OF 2

TALLEY METALS TECH, INC.

ACCOUNTS PAYABLE  
P. O. BOX 2498  
HARTSVILLE, SC 29551

| CUSTOMER ORDER NO./BESTELL-NR./N° DE COMMANDE | CARPENTER NO./WERKS-NR./N° DE REFERENCE INTERNE | DATE/DAUM/DATE | WEIGHT/GEWICHT/POIDS |
|---|---|----------------|----------------------|
| P903179-423-6                                 | TLY106604 L15747                                | 06/20/06       | 9780.000             |

HEAT NUMBER / SCHMELZE-NR. / N° DE COULÉE:  
CAPABILITY

G11957

900 F ( 482 C ), 01 HR

AIR COOL

YIELD STRENGTH, (0.20 %) KSI(MPA) 211.0( 1455)  
TENSILE STRENGTH, KSI(MPA) 216.0( 1489)  
ELONGATION IN 1.40", % 11.0  
REDUCTION OF AREA, % 45.0  
HARDNESS, HB 424.0

( CONVERTED FROM TENSILE STRENGTH )

NO WELD REPAIR PERFORMED  
MATERIAL PRODUCED ON THIS ORDER WAS MELTED AND MANUFACTURED IN THE U.S.A.  
MATERIAL SUPPLIED COMPLIES WITH THE REQUIREMENTS OF DFARS 252.225.7014  
(JUNE 2005) ALT.1 AND SUBSECTION 225.872.1.  
WE HEREBY CERTIFY THAT THE ABOVE TEST DATA ARE IN ACCORDANCE WITH THE  
PURCHASE ORDER AND SPECIFICATION REQUIREMENTS. CERTIFICATE OF TEST IS  
PREPARED IN ACCORDANCE WITH PARAGRAPH 3.1B OF EN 10204 (DIN50049)

TIMOTHY DUVALL  
QUALITY ASSURANCE REP.  
CARPENTER TECHNOLOGY CORPORATION

510513

**EARLE M. JORGENSEN**  
**CERTIFICATION OF COMPLIANCE**

We certify that this shipment of material conforms  
To the applicable specifications shown on this  
purchase order.

Customer EMJ  
Cust. P.O. 4005376-1  
EMJ S.I.D. # JS40448  
City St. J. J. J.  
Date 7/14/06  
Signature Earle M. Jorgensen  
Title QC CERTIFICATION CLERK

*Timothy M. Duvall*

This certification is made to the customer printed on this form. Carpenter neither endorses, nor assumes responsibility for, any representation or certification or other practice.  
Die vorliegende Zertifikatsform ist nur für den in diesem Formular genannten Kunden gültig. Carpenter übernimmt gegenüber Dritten keinerlei Haftung für die Verwendung in Daten oder Zertifikatsform.  
Ce certificat est uniquement valable pour le client dont le nom est imprimé sur ce formulaire. Carpenter n'assume pas de responsabilité pour une certification vis-à-vis d'une tierce personne.



# Bodycote

2005 MONTGOMERY STREET - FORT WORTH, TEXAS 76107-4012  
TEL: 817-737-6651 METRO: 817-429-2248 FAX: 817-377-9610

Cert No.

34-44932



Certified:

9/21/06

Certification  
Reviewed  
Accepted

2 *LD*

Bill To

4005761-1-1  
THRU

Ship To

FMI-Fitz Mfg. Ind.  
4212 Mclean Road  
Ft Worth, TX 76117

4005761-1-12

Ship To: 34-27985-1  
FMI-Fitz Mfg. Ind.  
4212 Mclean Road  
Ft Worth, TX 76117

## CERTIFICATION

|   |                      |                       |                      |
|---|----------------------|-----------------------|----------------------|
| Order No<br>60281   | PO Number<br>4005761 | PL Number             | Received<br>9/18/06  |
| <b>Requirements</b>   |                      | <b>Value</b>          |                      |
| Surface Hardness Min (HRC)  |                      | 34.0                  |                      |
| Surface Hardness Max (HRC)  |                      | 42.0                  |                      |
| Qty<br>16   | Wgt<br>27.2          | Part No.<br>1/2" x 3' | Part Name<br>17-4 PH |
| Part Description<br>Age to H1025<br>JSFE03-05-078 Rev.C Lot#114532-1(100 pcs)<br>JSFE03-05-124 Rev.C Lot#114533-1(100 pcs)<br>Heat#E52277 Doc#4004892-1-1-2829  |                      |                       |                      |
| Qty<br>16   | Wgt<br>27.2          | Part No.<br>5/8" x 3' | Part Name<br>17-4 PH |
| Part Description<br>Age to H1025<br>JSFE03-07-096 Rev.C Lot#114534-1(100 pcs)<br>Heat#G11957 Doc#4005376-1-5-3032 M# 127934-1   |                      |                       |                      |
| Qty<br>16   | Wgt<br>27.2          | Part No.<br>3/8" x 3' | Part Name<br>17-4 PH |
| Part Description<br>Age to H1025<br>JSFE03-03-025 Rev.C Lot#114124-1(258 pcs)<br>JSFE03-03-020 Rev.C Lot#113375-1(258 pcs)<br>JSFE03-03-010 Rev.C Lot#114123-1(100 pcs)<br>Heat#G11100 Doc#4003917-1-1-2520 |                      |                       |                      |



4005761-1-1 THRU 4005761-1-12

| Qty   | Wgt  | Part No.    | Part Name | Material |
|---|------|-------------|-----------|----------|
| 16  | 27.2 | 7/16" x 3'  |           | 17-4 PH  |
| Part Description<br>Age to H1025<br>JSFE03-04-027 Rev.C Lot#114531-1(100 pcs)<br>JSFE03-04-078 Rev.C Lot#113273-1(100 pcs)<br>JSFE03-04-023 Rev.C Lot#113272-1(100 pcs)<br>JSFE03-04-015 Rev.C Lot#113270-1(100 pcs)<br>JSFE03-04-020 Rev.C Lot#113271-1(100 pcs)<br>Heat#G11625 Doc#4005376-1-2-3029 |      |             |           |          |
| Qty   | Wgt  | Part No.    | Part Name | Material |
| 12  | 20.4 | 11/16" x 3' |           | 17-4 PH  |
| Part Description<br>Age to H1025<br>JSFE03-08-025 Rev.C Lot#114125-1(100 pcs)<br>Heat#E60338 Doc#4005376-1-6-3033   |      |             |           |          |

Certification  
Reviewed  
Accepted  
2 *Ld*

76 129.2 TOTAL

We hereby certify that the parts described above were given the following Heat Treatment and that temperatures and test results were obtained with standard approved methods.

| Recorded Values                | Readings |
|--------------------------------|----------|
| Surface Hardness Min (HRC)     | 35.5     |
| Surface Hardness Max (HRC)     | 38.0     |
| Quantity Inspected = (Integer) | 6        |

Processed per AMS-H-6875A

Fce#32 - Aged @ 1025°F for 4 Hours - Air Cooled

All processes involved in the production of these articles and requiring specific process approval have been so approved and certificates are on file subject to examination.

Bodycote Thermal Processing - Fort Worth, Texas

Certified: 9/21/06

By: Joel Hall, Q.A. Manager

*[Signature]* Revised 10/10/06



**FMI**  
**6625 IRON HORSE BLVD.**  
**NORTH RICHLAND HILLS, TX 76180**  
**PHONE 817-281-8816**  
**FAX 817-498-6974**

**PASSIVATION CERTIFICATION**

**PART NUMBER:** NAS77C6-017

**M NUMBER:** 127934-1

**MATERIAL:** 17-4 PH

**DESCRIPTION OF PROCESS:** PASSIVATE

**SPECIFICATION:** AMS-2700B, METHOD I TYPE 2

**RESULTS:** Accept **QUANTITY:** 250

**FMI CERTIFIES THAT THE ABOVE PART NUMBER, AND  
M NUMBER HAS BEEN PROCESSED IN COMPLIANCE  
WITH THE SPECIFICATION LISTED ABOVE. ALL APPLICABLE  
TEST RECORDS ARE ON FILE AND AVAILABLE FOR  
EXAMINATION.**

*Claire P. Sabater*

**TITLE: QUALITY ASSURANCE**

**CLAIRE P. SABATER**

**DATE: 4/14/2008**

**THIS CERTIFICATION SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE APPROVAL OF  
FITZ MANUFACTURING INDUSTRIES.**



VT DYMAX Citrix - WRQ Reflection for UNIX and OpenVMS

File Edit Connection Setup Macro Window Help



Prereceipts Entry

[ Receipt Information

Branch ID..NY UFC AEROSPACE

Receipt....PUR01EMR Purchase Order

Receipt Memo. 04182008

UFC AEROSPACE CORP.

W008\_3 MEMO

[ Vendor Profile ]

Vendor ID..F016

FMI(FITZ MFG)

[ Order Messages ]

MJ

PLEASE CONFIRM BACK TO KATHY  
VIA EMAIL KBOYLE@UFCAERO.COM  
OR FAX 631-388-6543. THANK YOU

Enter a Memo Message for this Order

610, 26

VT500-7 -- 192.168.1.10 via TELNET



Inbox - Microsoft O...



DYMAX Citrix - WR...





# B/E Aerospace, Inc.

Page: 1 of 1

## CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172

### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO25711**

| LINE# | QUANTITY | U/M | PART-NUMBER | CUST REF# | LOT-NUMBER | MANUFACTURER  | CCODE | MFR DATE | EXP DATE |
|-------|----------|-----|-------------|-----------|------------|---------------|-------|----------|----------|
| 3     | 25       | EA  | AN6H13A     |           | 58713      | MAC FASTENERS | ORFT4 |          |          |

  
Jason Lewis  
Vice President of Quality

09/11/14

**MACFASTENERS, INC.**

1110 Enterprise Street  
Ottawa, KS 66067  
Phone: 785-242-8812  
Fax: 785-242-4616

***Packing List***

**Bill** B/E AEROSPACE CONSUMABLES MGMT  
To: 10000 NW 15TH TERRACE  
MIAMI, FL 33172

**Ship** B/E AEROSPACE CONSUMABLES MGMT  
To: 9835 NW 14th Street  
Miami, FL 33172  
United States

**Shipment No:** 51025  
**Shipment Date:** 10/19/11  
**Ship Via:** United Parcel Service  
**Order Number:** 43199  
**Order Date:** 09/29/11

**Customer Code:** BE AEROSPACE  
**Phone:** (305) 925-2600  
**PO Number:** OBJR08  
**Terms:** Net 30 Days

LOT #58713

| <u>Item</u> | <u>Quantity</u> |                |                 |                 |   | <u>Unit</u>                      | <u>Description</u> | <u>Revision</u> | <u>Job<br/>Number</u> |
|-------------|-----------------|----------------|-----------------|-----------------|---|----------------------------------|--------------------|-----------------|-----------------------|
|             | <u>Open</u>     | <u>Shipped</u> | <u>Back Ord</u> | <u>Canceled</u> |   |                                  |                    |                 |                       |
| 1           | 1,000           | 1,000          | 0               | 0               | M | AN6H13A Bolt, machine-- Aircraft | 2                  | 58713           |                       |

**MAC FASTENERS, INC.**  
**1110 ENTERPRISE**  
**OTTAWA, KANSAS 66067**

**CERTIFICATE OF CONFORMANCE  
AND  
MANUFACTURER'S AFFIDAVIT**

CUSTOMER: B/E AEROSPACE

PO: OBJR08

PART NUMBER: AN6H13A

REV: 2

LOT NUMBER: 58713

MANUFACTURED QUANTITY: 1,000

MILL HEAT NUMBER: 8076628

COUNTRY OF ORIGIN: UNITED STATES OF AMERICA

DFARS 252.225-7014, ALTERNATE 1 COMPLIANT

**MERCURY FREE CERTIFICATION**

MacFasteners Inc. certifies that the parts referenced in the above lot number do not contain Mercury or Mercury compounds, and were manufactured in a Mercury free environment.

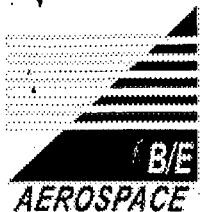
We certify that the parts furnished against the above referenced purchase order were manufactured by MAC FASTENERS, INC. within the United States, and were processed in accordance with all applicable drawings and specifications.

Objective evidence of compliance is on file, subject to examination upon request.

DATE: 10/19/11

  
\_\_\_\_\_  
QUALITY ASSURANCE REPRESENTATIVE

MacFasteners, Inc. is an AS9100/ISO9001 Registered Company - PJR# C2009-00297



# B/E Aerospace, Inc.

Page: 1 of 1

## CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


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**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO25711**

| LNE# | QUANTITY | U/M | PART-NUMBER | CUST REF# | LOT-NUMBER | MANUFACTURER         | CCODE | MFR DATE | EXP DATE |
|------|----------|-----|-------------|-----------|------------|----------------------|-------|----------|----------|
| 12   | 300      | EA  | MS21075L3N  |           | 51587      | ALCOA FASTENING/REPU | 52828 |          |          |

  
Jason Lewis  
Vice President of Quality

09/11/14

**CERTIFICATE OF TEST**

WE HEREBY CERTIFY THAT ALL MATERIALS USED IN THE MANUFACTURE OF PARTS COVERED BY THE REPORT CONFORM TO THE MATERIAL SPECIFICATIONS CALLED FOR BY THE PURCHASE ORDER. WE FURTHER CERTIFY THAT THE PARTS ARE MANUFACTURED IN ACCORDANCE WITH APPLICABLE DRAWINGS OR SPECIFICATIONS CURRENT ON THE DATE OF MANUFACTURE. TEST REPORTS COVERING MATERIALS IN THESE PARTS AND INDICATING CONFORMANCE WITH APPLICABLE SPECIFICATIONS ARE ON FILE AND SUBJECT TO EXAMINATION. PARTS AS SHIPPED HAVE NEVER BEEN IN CONTACT WITH MERCURY. **THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT WRITTEN APPROVAL OF THE LABORATORY.**

PARTS MANUFACTURED IN: ☐ U.S.A. ☒ MEXICO  
☒ IN ACCORDANCE WITH: DFAR 252.225.7014 ALT. I and DFAR 252.225.7009

Delphin Martinez  
Signature of Quality Assurance Representative

4-16-14  
Date

|                      |   |                    |                  |
|----------------------|---|--------------------|------------------|
| P.O. No:             | 0NAP24                                    | Item No:           | MS21075L3N REV.2 |
| Quantity Ordered:    | 105,160                                   | Date Cert Ordered: | 4-16-14          |
| Customer:            | B/E AEROSPACE CONSUMABLES                 | ID No.:            | 51587            |
| Description:         | ASSEMBLY                                  | Procurement Spec.: | NASM25027        |
| Also Certified To:   | MS21075L3<br>NAS1068A3, NAS1068RA3 REV.13 | Additional Info:   | RFM20A3          |
| Date of Manufacture: | 1-14-14                                   |                    |                  |

**IF APPLICABLE, CHECK ON BELOW:**

☐ **FAA CERTIFICATION (PMA):** IT IS HEREBY CERTIFIED THAT (A) THE PARTS AND/OR MATERIALS REFLECTED HERE-IN WERE PRODUCED UNDER FEDERAL AVIATION ADMINISTRATION APPROVED MANUFACTURING AND QUALITY CONTROL SYSTEMS/METHODS AS SET FORTH IN FEDERAL AVIATION REGULATION, PART 21, SUB-PART K, PARAGRAPH 21.303 AND (B) ALL PARTS AND/OR MATERIALS ARE CERTIFIED NEW, CONFORMS TO THE DESIGN DATA AND ARE IN AIR WORTHY CONDITION.

Signature of Quality Assurance Representative

Date

☒ **TSO-C148 STATEMENT:** THE PARTS CONTAINED IN THIS SHIPMENT HAVE BEEN MANUFACTURED AND INSPECTED IN ACCORDANCE WITH TSO-C148. THE CONDITIONS AND TESTS REQUIRED FOR TSO APPROVAL OF THIS ARTICLE ARE MINIMUM PERFORMANCE STANDARDS. AIRCRAFT FASTENERS APPROVED UNDER THIS TSO ARE NOT NECESSARILY INTERCHANGEABLE WITH OTHER AIRCRAFT FASTENERS APPROVED UNDER THIS TSO. FASTENERS OF SIMILAR DIMENSIONAL PROPERTIES MAY HAVE WIDELY VARYING PERFORMANCE AND METALLURGICAL PROPERTIES. SUBSTITUTION OF PARTS MAY ONLY BE DONE IS ACCEPTABLE TO OR APPROVE BY THE ADMINISTRATOR.

Delphin Martinez  
Signature of Quality Assurance Representative

4-16-14  
Date



**FINAL (PROCESSING, LAB, MECHANICAL TESTING) INSPECTION REPORT**

| Lot Number:<br><b>51587</b>            | Part Number:<br><b>RFM20A3</b>   | Dwg. Number:<br><b>NASM21075</b>   | Dwg. Rev#:<br><b>2</b>   | Lot Quantity:<br><b>105,160</b> | Date:<br><b>4-10-14</b> |
|--|--|--|--|---------------------------------|-------------------------|
| Procurement Spec.:<br><b>NASM25027</b> |  | Proc. Spec. Rev#:<br><b>1</b>  | Note: All Specifications Referenced Refer To The Most Current Revision Unless Otherwise Stated |                                 |                         |
| SAMPLE SIZE                            | CHARACTERISTIC DESCRIPTION   | INSPECTION MEDIA   | ACCEPTANCE STAMP   | PRODUCTION RELEASE DATE         |                         |
| NUT                                    | Material: <b>CA1STRIP</b><br>Heat: <b>239202</b><br>Size: <b>.032x.750</b>   | Vendor Certification<br>Alloy Verification                                       | <b>RFM 209-1</b>   | <b>1-14-14</b>                  |                         |
| CAP                                    | Material:<br>Heat:<br>Size:  | Vendor Certification<br>Alloy Verification                                       | <b>N/A</b>   |                                 |                         |
| BASKET                                 | Material: <b>CA1STRIP</b><br>Heat: <b>NLPQ0784</b><br>Size: <b>.025x.812</b> | Vendor Certification<br>Alloy Verification                                       | <b>RFM 209-1</b>   | <b>1-14-14</b>                  |                         |
| CLIP                                   | Material:<br>Heat:<br>Size:  | Vendor Certification<br>Alloy Verification                                       | <b>N/A</b>   |                                 |                         |
|  | AMS2759/3 Stainless Steel Only<br>Aged Load:                                 | Tensile<br>HRC Hardness Tester   | <b>N/A</b>   |                                 |                         |
| <b>15</b>                              | AMS-H-6875 Steel Only<br>Austempering Load: <b>4-11-14</b>                   | Tensile<br>HRC Hardness Tester   | <b>RFM 207-1</b>   | <b>4/12/14</b>                  |                         |
|  | AMS2410 [ ] AMS2411 [ ]  | Visual Adhesion And Thickness<br>ASTM B568                                       | <b>N/A</b>   |                                 |                         |
| <b>80</b>                              | AMS-QQ-P-416 Class 1 [ ] 2 [ ] 3 [ ]   | Visual Adhesion And Thickness<br>ASTM B568                                       | <b>RFM 207-1</b>   | <b>4/14/14</b>                  |                         |
|  | AMS2400  | Visual Adhesion And Thickness<br>ASTM B568                                       | <b>RFM 207-1</b><br><b>N/A</b>   |                                 |                         |
| <b>10</b>                              | Embrittlement Relief   | 23 [X] 48-50 [ ] Clip<br>Hours Stress At Room Temp Per<br>NASM1312, Test 14      | <b>RFM 207-1</b>   | <b>4/14/14</b>                  |                         |
|  | Embrittlement Relief   | 96 [ ] Hours Stress At Service<br>Temp Per NASM1312, Test 14 [ ]<br>BPS-N-70 [ ] | <b>N/A</b>   |                                 |                         |
| <b>80</b>                              | Gold Chromate Treatment Type II  | Visual- Workmanship<br>Salt Spray Test of AMS-QQ-P-416                           | <b>RFM 207-1</b>   | <b>4/14/14</b>                  |                         |
|  | Stainless Steel Only<br>Passivated Per AMS-QQ-P-35, AMS2700                  | Visual High Humidity Test Per<br>NASM1312  | <b>N/A</b>   |                                 |                         |
|  | Magnetic Permeability <2.0 (Air 1.0) For A Field<br>Strength = 200 Oersts    | Indicator Per ASTM A342 Method<br>3, Corrosion Resistant Steel Only              | <b>N/A</b>   |                                 |                         |
| <b>80</b>                              | Non-Destructive Testing Discontinuities<br>Sample <b>M</b> 100% [ ]          | Magnetic Particle Per ASTM<br>E1444 or Fluorescent Penetrant<br>Per ASTM E1417   | <b>RFM 207-1</b>   | <b>4/14/14</b>                  |                         |
| <b>32 PCS</b>                          | Carbowax Per C-1315 Drawing<br>Batch No :                                    | Visual, Workmanship  | <b>N/A</b>   |                                 |                         |
| <b>27</b>                              | Dry Film Lubricant Per AS5272 Type 1<br>Batch No : <b>PC14540</b>            | Visual, Workmanship, Adhesion<br>Per AS5272<br>Verify Periodic Salt Spray        | <b>RFM 207-1</b>   | <b>4/15/14</b>                  |                         |
|  | Microstructure   | BPS-N-70 [ ]<br>NAS3350 [ ]  | <b>N/A</b>   |                                 |                         |
| <b>32</b>                              | Threads Per MIL-S-8879, AS8879   | Method B, System 22  | <b>RFM 209-1</b>   | <b>3-03-14</b>                  |                         |



Alcoa Fastening Systems  
Aerospace Products · Republic Operations  
Quality Operating Procedure

Document: F-10.706.1  
Revision: 2  
Effective Date: 9-25-2010  
DCN: 1367

Push-Out, Torque-Out, Wrenching Torque, Tensile Test Results

| LOT NUMBER | BPS-N-70 ATTRIBUTE PLAN   | NOTE  | 25027 ATTRIBUTE PLAN  |
|------------|---|---|---|
| 51587      | LOT SIZE SS<br>UNDER 9..... 2<br>9 THRU 15..... 3<br>16 THRU 25..... 4<br>26 THRU 90..... 5<br>91 THRU 280..... 7<br>281 THRU 3200..... 13<br>OVER 3200..... 15 | ALL SAMPLES TESTED MUST MEET<br>OR EXCEED THE MINIMUM<br>REQUIREMENTS | LOT SIZE SS<br>UNDER 10M..... 5<br>10M THRU 50M..... 10<br>50M THRU 100M..... 15<br>OVER 100M..... 27 |

|               |     |               |     |                 |     |                       |     |
|---------------|-----|---------------|-----|-----------------|-----|-----------------------|-----|
| PUSH-OUT TEST |     | DATE: 4-15-14 |     | MIN. 100 POUNDS |     | PUSH-OUT REQUIREMENTS |     |
| 110           | 110 | 110           | 110 | 110             | 110 | 110                   | 110 |
| 110           | 110 | 110           | 110 | 110             | 110 | 110                   | 110 |
| 110           | 110 | 110           | 110 | 110             | 110 | 110                   | 110 |

PASS / FAIL

STAMP

|                 |    |               |    |                     |    |                         |    |
|-----------------|----|---------------|----|---------------------|----|-------------------------|----|
| TORQUE-OUT TEST |    | DATE: 4-15-14 |    | WRENCH SN: 4584     |    | TORQUE-OUT REQUIREMENTS |    |
|                 |    |               |    | MIN. 60 INCH POUNDS |    |                         |    |
| 65              | 65 | 65            | 65 | 65                  | 65 | 65                      | 65 |
| 65              | 65 | 65            | 65 | 65                  | 65 | 65                      | 65 |
| 65              | 65 | 65            | 65 | 65                  | 65 | 65                      | 65 |

PASS / FAIL

STAMP

|                       |  |             |  |                        |  |                               |  |
|-----------------------|--|-------------|--|------------------------|--|-------------------------------|--|
| WRENCHING TORQUE TEST |  | DATE: _____ |  | WRENCH SN: _____       |  | WRENCHING TORQUE REQUIREMENTS |  |
|                       |  |             |  | MIN. _____ INCH POUNDS |  |                               |  |
|                       |  |             |  |                        |  |                               |  |
|                       |  |             |  |                        |  |                               |  |

PASS / FAIL

STAMP

|                     |      |                 |      |                    |              |                            |  |
|---------------------|------|-----------------|------|--------------------|--------------|----------------------------|--|
| TENSILE TEST        |      | DATE: 4/15/14   |      | MACHINE SN: 223757 |              | STAMP: RK                  |  |
| TEST BOLT: NAS 9703 |      | 25027 REQ: 2460 |      | LBS.               |              | BPS-N-70 REQ: _____ LBS.   |  |
| 2540                | 2540 | 2540            | 2540 | 2540               | HIGH = 2540  | [X] PROOF LOAD TEST *      |  |
| 2540                | 2540 | 2540            | 2540 | 2540               | LOW = 2540   | [ ] TESTED TO FAILURE      |  |
| 2540                | 2540 | 2540            | 2540 | 2540               | R = 0        | (RANGE = HIGH MINUS LOW)   |  |
| 2540                | 2540 | 2540            | 2540 | 2540               | X = 2540     | (AVERAGE TENSILE STRENGTH) |  |
| 2540                | 2540 | 2540            | 2540 | 2540               | R x .4 = 0   |                            |  |
| 2540                | 2540 | 2540            | 2540 | 2540               | X-.4R = 2540 |                            |  |

\*Note: The required Safety Load is 3% minimum above the specified minimum Proof Load requirement as described in QOP 10.702.



**FINAL TORQUE AND HARDNESS TEST RESULTS**

|                             |                                |                                  |                        |                                 |
|-----------------------------|--------------------------------|----------------------------------|------------------------|---------------------------------|
| Lot Number:<br><b>51587</b> | Part Number:<br><b>RFM20A3</b> | Dwg. Number:<br><b>NASM21075</b> | Dwg. Rev#:<br><b>2</b> | Lot Quantity:<br><b>105,160</b> |
|-----------------------------|--------------------------------|----------------------------------|------------------------|---------------------------------|

| BPS-N-70 ATTRIBUTE PLAN |             |        | Other:      |        | 25027 ATTRIBUTE PLAN |             |        |
|-------------------------|-------------|--------|-------------|--------|----------------------|-------------|--------|
| Lot Size                | Sample Size | Accept | Sample Size | Accept | Lot Size             | Sample Size | Accept |
| UNDER 9                 | 2           | 0      |             |        | Under 10M            | 5           | 0      |
| 9 THRU 15               | 3           | 0      |             |        | 10M THRU 50M         | 10          | 0      |
| 16 THRU 25              | 4           | 0      |             |        | 50M THRU 100M        | 15          | 0      |
| 26 THRU 90              | 5           | 0      |             |        | OVER 100M            | 27          | 0      |
| 91 THRU 280             | 7           | 0      |             |        |                      |             |        |
| 281 THRU 3200           | 13          | 0      |             |        |                      |             |        |
| OVER 3200               | 15          | 0      |             |        |                      |             |        |

| TORQUE TEST  |      |      |  |      |                                     |                          |      |      |  |                          |      |      |            |      |
|--|------|------|--|------|-------------------------------------|--------------------------|------|------|--|--------------------------|------|------|------------|------|
| Test Bolt:<br><b>NAS9703</b>                       |      |      |  |      | Test Bolt Lot #:<br><b>AM10631B</b> |                          |      |      |  | Date:<br><b>04-15-14</b> |      |      | Stamp:<br> |      |
| Max. In. Lbs.: (1 <sup>ST</sup> ON)<br><b>18.0</b> |      |      | Min. In. Lbs.: (1 <sup>ST</sup> BRK)<br><b>2.0</b> |      |                                     | Seated Load:<br><b>—</b> |      |      | NOTE: Record all cycles exhibiting values exceeding or not meeting maximum or minimum requirements as described in QOP 10.703, paragraph 8.7 and 9.11. |                          |      |      |            |      |
| CY   | ON   | BRK  | ON   | BRK  | ON                                  | BRK                      | ON   | BRK  | ON   | BRK                      | ON   | BRK  | ON         | BRK  |
| 1  | 10.0 | 9.0  | 8.0  | 8.0  | 9.0                                 | 7.0                      | 11.0 | 9.0  | 12.0   | 9.0                      | 10.0 | 10.0 | 11.0       | 9.0  |
| 7  | 11.0 | 10.0 | 8.0  | 6.0  | 8.0                                 | 7.0                      | 9.0  | 8.0  | 12.0   | 10.0                     | 10.0 | 8.0  | 12.0       | 8.0  |
| 15   | 12.0 | 11.0 | 8.0  | 7.0  | 9.0                                 | 8.0                      | 9.5  | 9.0  | 11.0   | 10.0                     | 10.0 | 10.0 | 11.0       | 9.0  |
| 1  | 10.0 | 9.0  | 8.0  | 8.0  | 9.0                                 | 7.0                      | 9.0  | 9.0  | 10.0   | 9.0                      | 9.0  | 8.0  | 8.0        | 7.0  |
| 7  | 9.0  | 8.0  | 9.0  | 8.0  | 7.5                                 | 6.5                      | 8.0  | 9.0  | 9.0  | 8.0                      | 9.0  | 8.0  | 8.0        | 7.5  |
| 15   | 12.0 | 9.0  | 8.0  | 8.0  | 7.0                                 | 6.0                      | 11.0 | 10.0 | 8.0  | 8.0                      | 8.0  | 8.0  | 8.0        | 7.0  |
| 1  | 10.0 | 8.0  | 10.0   | 9.0  | 10.0                                | 9.0                      | 10.0 | 9.0  | 11.0   | 9.0                      | 13.0 | 11.0 | 10.0       | 9.0  |
| 7  | 11.0 | 9.0  | 11.0   | 10.0 | 11.0                                | 11.0                     | 9.0  | 8.0  | 10.0   | 10.0                     | 10.0 | 8.5  | 10.0       | 10.0 |
| 15   | 10.0 | 9.0  | 12.0   | 12.0 | 13.0                                | 13.0                     | 10.0 | 8.0  | 12.0   | 10.0                     | 12.0 | 10.0 | 10.0       | 9.0  |
| 1  | 10.0 | 10.0 | 9.0  | 7.0  | 11.0                                | 11.0                     | 11.0 | 9.0  | 11.0   | 10.0                     | 8.0  | 7.0  |            |      |
| 7  | 9.0  | 10.0 | 8.0  | 8.0  | 12.0                                | 10.0                     | 11.0 | 10.0 | 10.0   | 10.0                     | 7.5  | 7.0  |            |      |
| 15   | 12.0 | 11.0 | 8.5  | 9.5  | 12.0                                | 10.0                     | 11.0 | 11.0 | 12.0   | 11.0                     | 7.5  | 6.5  |            |      |

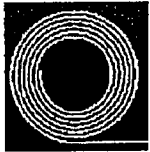
| HARDNESS TEST                                 |      |      |      |      |   |      |      |      |      |                         |      |      |            |      |
|---|------|------|------|------|---|------|------|------|------|-------------------------|------|------|------------|------|
| CONVERTED FROM 30N SCALE TO HRC per ASTM E140 |      |      |      |      | HRC Requirement:<br>Min.: _____ Max.: <b>49</b> |      |      |      |      | Date:<br><b>4-12-14</b> |      |      | Stamp:<br> |      |
| HRC   | 45   | 45   | 45   | 45   | 44  | 44   | 45   | 45   | 44   | 44                      | 45   | 44   | 44         | 45   |
| 30N   | 63.7 | 64.2 | 63.7 | 64.3 | 63.1  | 62.9 | 63.6 | 64.2 | 63.2 | 63.4                    | 63.8 | 63.3 | 63.5       | 63.7 |
| 15N*  |      |      |      |      |   |      |      |      |      |                         |      |      |            |      |

\* CLIPS AND NUTS ONLY



Nut

## CERTIFIED TEST REPORT



### Calstrip Steel Corporation

REGISTERED ISO 9001:2008

7140 Baudini Blvd. • Los Angeles, CA 90040-3388  
(323)726-1345 • Fax (323)722-8269

|  |   |
|--|---|
| <b>Customer:</b> ALCOA FASTENING SYSTEMS REPUBLIC<br><b>Address:</b> REPUBLIC FASTENER<br>1300 RANCHO CONEJO BLVD.<br>NEWBURY PARK, CA 91320   | <b>Order Number:</b> S88785 / W113049<br><b>Customer PO:</b> 220695680<br><b>Shipped Date:</b> 01/07/2014<br><b>Packlist ID:</b> 156674 |
| <b>Part ID:</b> R620-032-750-CS<br><b>Description:</b> HC.CR.1050.032X750 XCOIL<br><b>Drawing #:</b> R620-032-750-CS<br><b>Rev #:</b> 08/20/08 | <b>Material Spec:</b> AMS-5085H, AMS QQS-700B, QQS-635,<br>ASTM A682-05, ASTM A684-12   |

HeatID: 239202

### CHEMICAL ANALYSIS

| C      | Mn     | P      | S      | Si     | Ni     | Cr     | Cu     | Mo     | Resi |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|
| 0.5100 | 0.6400 | 0.0200 | 0.0050 | 0.2360 | 0.0320 | 0.0550 | 0.1060 | 0.0110 |      |
| W      | V      | Sn     | Ti     | Al     | Ca     | Zr     | Co     | N      | B    |
|        | 0.0030 |        | 0.0030 | 0.0270 |        |        |        | 0.0080 |      |

### MECHANICAL AND PHYSICAL PROPERTIES

| Yield      | Tensile    | Elong % | Hardness | Bend Test |
|------------|------------|---------|----------|-----------|
|            |            |         | HRB 77   | OK        |
| Grain Size | Olsen Test | Spher%  | Decarb   | Reduct %  |
| 8          |            | 100     | 0        |           |

| Skid Numbers | # of Coils | Weight |
|--------------|------------|--------|
| W113049-1    | 7          | 1,276  |
| W113049-2    | 7          | 1,282  |
| W113049-3    | 7          | 1,174  |
| W113049-4    | 7          | 1,168  |
|              | 28         | 4,900  |

Comment: SOURCE- NUCOR (USA)

RFM  
AV



14-900

All work on this order has been performed in accordance with the Company's Quality Assurance Manual.

MARIO VARGAS

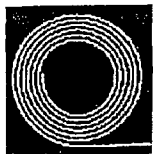
Technical Services

Form #:

Print Date: 1/7/2014

Page: 2

Basket

**CERTIFIED TEST REPORT****Calstrip Steel Corporation**

REGISTERED ISO 9001:2008

7140 Bandini Blvd. \* Los Angeles, CA 90040-3388

(323)726-1345 \* Fax (323)722-8269

|  |   |
|--|---|
| <b>Customer:</b> ALCOA FASTENING SYSTEMS REPUBLIC<br><b>Address:</b> REPUBLIC FASTENER<br>1300 RANCHO CONEJO BLVD.<br>NEWBURY PARK, CA 91320 | <b>Order Number:</b> S88785 / W113045<br><b>Customer PO:</b> 220695680<br><b>Shipped Date:</b> 01/07/2014<br><b>Packlist ID:</b> 156674 |
| <b>Part ID:</b> R620-025-812-CS<br><b>Description:</b> HC.CR.1050.025X.812XCOIL<br><b>Drawing #:</b> R620-025-812<br><b>Rev #:</b>           | <b>Material Spec:</b> AMS-5085H, AMS QQS-700B, QQS-635,<br>ASTM A682-05, ASTM A684-12   |

HeatID: NLPO0784

**CHEMICAL ANALYSIS**

| C      | Mn     | P      | S      | Si     | Ni     | Cr     | Cu     | Mo     | Resi   |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.5200 | 0.6200 | 0.0080 | 0.0080 | 0.2020 | 0.0600 | 0.0500 | 0.1400 | 0.0200 |        |
| W      | V      | Sn     | Ti     | Al     | Ca     | Zr     | Co     | N      | B      |
|        | 0.0012 | 0.0240 | 0.0020 | 0.0390 | 0.0013 |        |        | 0.0080 | 0.0001 |

**MECHANICAL AND PHYSICAL PROPERTIES**

| Yield | Tensile | Elong % | Hardness | Bend Test |
|-------|---------|---------|----------|-----------|
|       |         |         | HRB 76   | OK        |

| Grain Size | Olsen Test | Spher% | Decarb | Reduct % |
|------------|------------|--------|--------|----------|
| 8          |            | 100    | 0      |          |

| Skid Numbers | # of Coils | Weight |
|--------------|------------|--------|
| W113045-1    | 8          | 1,364  |
| W113045-2    | 7          | 1,210  |
| W113045-3    | 7          | 1,214  |
|              | 22         | 3,788  |

Comment: SOURCE- NLMK (USA)/DFAR COMPLIANT.



RFM

AV

14-899

All work on this order has been performed in accordance with the Company's Quality Assurance Manual.

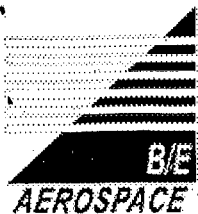
MARIO VARGAS

Technical Services

Form #:

Print Date: 1/7/2014

Page: 1



# B/E Aerospace, Inc.

Page: 1 of 1

## CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO25711**

| LINE# | QUANTITY | U/M | PART-NUMBER | CUST REF# | LOT-NUMBER | MANUFACTURER | CCODE | MFR DATE | EXP DATE |
|-------|----------|-----|-------------|-----------|------------|--------------|-------|----------|----------|
| 13    | 50       | EA  | MS21083C8   |           | 39223-000  | MACLEAN-ESNA | 019L2 |          |          |

  
Jason Lewis  
Vice President of Quality

09/11/14



# MACLEAN-ESNA

## MANUFACTURER'S AFFIDAVIT

I, Cliff Hufstedler hereby certify that the below named parts  
(Name)

were manufactured by MacLean-ESNA located at  
(Company Name)

611 Country Club Rd. Pocahontas, AR 72455  
(Street Address) (City) (State) (Zip Code)

| Part No.  | Part Description  |
|---|-------------------|
| <u>180846 79NTE-080</u><br><u>Cust PN MS21083CB</u> | <u>Steel Nuts</u> |

I further certify that should any change in the manufacturing process occur which changes the country of origin, I will immediately notify M&M Aerospace Hardware, Inc. in writing and provide a new Manufacturer's Affidavit.

Cliff Hufstedler  
(Signature)

Plant Manager  
(Title)

8/19/08  
(Date)

MACLEAN-ESNA  
A MACLEAN-FOGG COMPANY  
611 COUNTRY CLUB ROAD  
POCAHONTAS, ARKANSAS 72455  
(870) 892-5201

TO: M&M AEROSPACE HARDWARE  
10000 N.W. 15 TERRACE  
MIAMI, FL 33172

DATE: 8/19/2008

|          |                     |                               |             |   |
|----------|---------------------|-------------------------------|-------------|---|
| SUBJECT: | YOUR ORDER NUMBER   | OFL390                        | ITEM NUMBER | 1 |
|          | ESNA ORDER NUMBER   | 052910                        |             |   |
|          | FSCM/ CAGE NUMBER   | 019L2                         |             |   |
|          | YOUR PART NUMBER    | MS21083C8                     |             |   |
|          | CERTIFIED AS        | MS21083C8 PER NASM21083 REV 1 |             |   |
|          | ESNA PART NUMBER    | 79NTE-080                     |             |   |
|          | QUANTITY            | 50000                         |             |   |
|          | PACKING LIST NUMBER | 46527                         |             |   |
|          | SHOP ORDER NUMBER   | 39223 - 000                   |             |   |

Gentlemen:

This is to certify that all applicable plating, heat treating, and inspection processing and that all material used in the manufacture of subject parts conform to the specification or drawings received by ESNA and set forth in the subject purchase order; that the parts are of good material and workmanship; and that all necessary records, including chemical and physical where applicable, will be made available for review upon request. The inspection and test reports provided represent the actual attributes of the items furnished on this contract and indicate full compliance with all applicable specification and contract requirements.

This is to certify that the materials supplied against the subject order are free of contamination by presence of mercury.

Very truly yours,

MACLEAN-ESNA  
A MACLEAN-FOGG COMPANY

*Mara Kildow*

for Jim Earley  
Quality Assurance Manager

NOTE: The magnetic permeability of subject parts was tested and found to be less than 2.0 (air = 1.0) for a field strength of H = 200 oersteds using an indicator in accordance with ASTM A342.

MACLEAN-ESNA  
A MACLEAN-FOGG COMPANY  
POCAHONTAS, ARKANSAS 72455

CERTIFICATE OF QUALITY COMPLIANCE

DATE: 8/19/2008

TO: M&M AEROSPACE HARDWARE  
10000 N.W. 15 TERRACE  
MIAMI, FL 33172

ESNA PART NO. 79NTE-080  
MANUFACTURER'S LOT SIZE 55929 (APPROX. WT. COUNT)  
MANUFACTURED UNDER SHOP ORDER NUMBER 39223 - 000  
ORIGINATED AS SHOP ORDER NUMBER

ACCEPTANCE TESTS PER NASM 25027

**MATERIAL** RAW MATERIAL TYPE 750 HEX 303 SS BAR DATE MFG: 07-08  
RAW MATERIAL CONFORMS TO AMS 5640 TYPE 1 AS EVIDENCED BY THE ATTACHED MILL CERTIFICATION. ESNA SHOP  
ORDER NO. 39223 - 000 MILL HEAT NO. 736973 VENDOR CARPENTER TECHNOLOGY  
RED NYLON IS A TRADEMARK OF ELASTIC STOP NUT. THIS ASSURES TRACEABILITY OF PARTS TO SOURCE. MATERIAL  
CERTIFICATION WITH HEAT NUMBERS ASSURES TRACEABILITY TO VENDOR OF RAW MATERIAL. NONMETALLIC INSERT  
CONFORMS TO ASTM D4066-00. (ZYTEL 103)

**FINISH** FINISH TYPE PASSIVATED PER QQ-P-35C  
LUBRICANT TYPE WAX LUBRICANT

**AXIAL STRENGTH** REQUIRED LBS. MINIMUM 7,400 ALL SAMPLE PIECES TESTED MEET OR EXCEED  
EXCEEDS LBS. 8,000 MINIMUM REQUIREMENTS.  
SAMPLE SIZE 15 PIECES.

**WORKMANSHIP** CONFORMS DIMENSIONALLY TO MS21083C8 PER NASM21083 REV 1  
STANDARD: BEARING SURFACE SQUARENESS AS SPECIFIED PER NASM 25027

DISCONTINUITIES

WITHIN LIMITS PER NASM 25027 AND MIL-STD-271D/ACN 1/ AND REV E/ NOTICE 2/ AND REV F/ NOTICE 1.

|                    |                         |     |
|--------------------|-------------------------|-----|
| MT PER SPEC 725    | SAMPLE SIZE( MT - PCS): | 0   |
|                    | ACCEPTED(PCS):          | N/A |
| PT PER SPEC 731 AA | SAMPLE SIZE( PT - PCS): | 32  |
|                    | ACCEPTED(PCS):          | 32  |

**LOCKING TORQUE** MAXIMUM LOCKING(IN. LBS.): 150  
MINIMUM BREAKAWAY(IN. LBS.): 18  
1ST CYCLE MAXIMUM LOCKING(IN. LBS.): 50  
7TH CYCLE MAXIMUM LOCKING(IN. LBS.): 50  
15TH CYCLE MAXIMUM LOCKING(IN. LBS.): 48  
15TH MINIMUM BREAKAWAY(IN. LBS.): 38  
ALL SAMPLE PIECES MEET  
OR EXCEED MINIMUM REQTS.  
SAMPLE SIZE 15 PIECES

**MERCURY FREE CLAUSE** WE CERTIFY THAT NO POSSIBILITY EXISTS FOR MERCURY CONTAMINATION TO OCCUR  
DURING MANUFACTURE, ASSEMBLY, OR TESTING OF PARTS ON THIS CONTRACT.

I CERTIFY THAT THE ABOVE TEST RESULTS AND/OR STATEMENTS ARE CORRECT AND REPRESENT THE PRODUCTS AS SUPPLIED.

FSCM/CAGE NO. 019L2  
COQC-NASM REV. 6-18-01

SIGNATURE *Mara Kildow*  
JIM EARLEY, QUALITY ASSURANCE MANAGER

MACLEAN-ESNA  
A MACLEAN-FOGG COMPANY  
POCAHONTAS, ARKANSAS 72455

LOCKING TORQUE TEST

CUSTOMER NAME M&M AEROSPACE HARDWARE  
10000 N.W. 15 TERRACE  
MIAMI, FL 33172

CUSTOMER DUE DATE

8/19/2008

CUSTOMER PO # OFL390  
ITEM NUMBER 180846  
QUANTITY 50000  
THREAD SIZE .500 -20UNJF-3B  
HEX .741 - .752  
LINE NO 1  
MS NUMBER - REF: MS21083C8 PER NASM21083 REV 1

ESNA ORDER # 052910  
PART # 79NTE-080  
SHOP ORDER # 39223 - 000  
LOT QUANTITY 55929  
PARENT SHOP ORDER # -

Sample Size & Requirements per Spec NASM25027

SampleSz 15

REQUIREMENT: 1ST, 7TH, 15TH, INSTALLATION MAXIMUM TORQUE 150  
15TH BREAKAWAY MINIMUM TORQUE 18

| SAMPLE # | 1ST ON | 1ST BREAK | 7TH ON | 7TH BREAK | 15TH ON | 15TH BREAK |
|----------|--------|-----------|--------|-----------|---------|------------|
| 1        | 42     | 52        | 40     | 44        | 34      | 40         |
| 2        | 40     | 50        | 39     | 42        | 32      | 38         |
| 3        | 37     | 42        | 32     | 40        | 32      | 40         |
| 4        | 42     | 50        | 40     | 42        | 40      | 43         |
| 5        | 40     | 45        | 38     | 40        | 37      | 40         |
| 6        | 45     | 48        | 42     | 44        | 40      | 42         |
| 7        | 50     | 55        | 39     | 42        | 38      | 40         |
| 8        | 50     | 60        | 42     | 48        | 40      | 44         |
| 9        | 42     | 50        | 40     | 48        | 40      | 42         |
| 10       | 38     | 40        | 42     | 48        | 40      | 42         |
| 11       | 40     | 45        | 38     | 42        | 36      | 40         |
| 12       | 45     | 50        | 42     | 48        | 40      | 45         |
| 13       | 40     | 45        | 50     | 55        | 47      | 49         |
| 14       | 50     | 60        | 50     | 54        | 48      | 50         |
| 15       | 42     | 48        | 40     | 46        | 40      | 42         |

SIGNATURE

*Mara Kildow*  
for JIM EARLEY, QUALITY ASSURANCE MANAGER

**MAC FASTENERS, INC.**  
**1110 EAST ENTERPRISE**  
**OTTAWA, KS 66067**

## CHEMICAL & PHYSICAL TEST REPORT

|                                  |                            |                              |                                     |
|----------------------------------|----------------------------|------------------------------|-------------------------------------|
| <b>CUSTOMER</b><br>B/E AEROSPACE | <b>PO NUMBER</b><br>OBJR08 | <b>MFG QUANTITY</b><br>1,000 | <b>DATE</b><br>10/19/11             |
| <b>PART NUMBER</b><br>AN6H13A    | <b>REV</b><br>2            | <b>LOT NO</b><br>58713       | <b>PROCUREMENT SPEC</b><br>NASM6812 |

|                              |     |       |      |   |     |     |     |                                    |      |   |                              |       |    |
|------------------------------|-----|-------|------|---|-----|-----|-----|------------------------------------|------|---|------------------------------|-------|----|
| <b>MATERIAL</b><br>TYPE 8740 |     |       |      | <b>MATERIAL SPECIFICATION</b><br>MIL-S-6049/AMS6322 |     |     |     | <b>MILL HEAT NUMBER</b><br>8076628 |      |   | <b>SUPPLIER</b><br>JOHNSTOWN |       |    |
| C                            | Si  | Mn    | P    | S   | Cu  | Ni  | Cr  | Mo                                 | V    | B | Fe                           | Al    | Ti |
| .41                          | .25 | .85   | .007 | .009  | .09 | .43 | .49 | .21                                | .002 |   |                              | .033  |    |
|                              | Co  | N     | Bi   | Pb  | Mg  | Zn  |     | Nb                                 | Sn   |   |                              | Other |    |
|                              |     | .0068 |      |   |     |     |     |                                    | .005 |   |                              |       |    |

### MECHANICAL TEST RESULTS - TESTING PER NASM1312

| ULTIMATE TENSILE STRENGTH<br>POUNDS |       |
|-------------------------------------|-------|
| 13,000                              |       |
| 12,980                              |       |
| 13,040                              |       |
| 13,060                              |       |
| 13,040                              |       |
| MIN. REQ.                           | 10100 |

| DOUBLE SHEAR STRENGTH<br>POUNDS / PSI |       |
|---------------------------------------|-------|
| 17,500                                |       |
| 17,400                                |       |
| 17,600                                |       |
| 17,500                                |       |
| 17,400                                |       |
| MIN. REQ.                             | 16560 |


| HARDNESS           |             |
|--------------------|-------------|
| ROCKWELL "C" SCALE |             |
| REQ.               | 26 - 32 HRC |
| SAMPLE SIZE        | 5           |
| ACTUAL RESULTS     |             |
| 26-28 HRC          |             |

| METALLURGICAL EXAMINATION                       |                                     |                                    |   |
|---|-------------------------------------|------------------------------------|---|
| Discontinuities                                 | <input checked="" type="checkbox"/> | Carb/Decarb                        | <input checked="" type="checkbox"/>           |
| Grain Flow                                      | <input checked="" type="checkbox"/> | Microstructure                     | <input checked="" type="checkbox"/>           |
| Grain Size                                      | <input checked="" type="checkbox"/> | Appearance                         | <input checked="" type="checkbox"/>           |
| Thread Inspection<br>FED-STD-H28/20 - ASME B1.3 |                                     | System <input type="checkbox"/> 21 | System <input checked="" type="checkbox"/> 22 |
|   |                                     |                                    | System <input type="checkbox"/> 23            |

| NDT/ ADDITIONAL TESTS                          |                                     |
|--|-------------------------------------|
| Magnetic Particle Inspection per<br>ASTM E1444 | <input checked="" type="checkbox"/> |
| Liquid Penetrant Inspection per<br>ASTM E1417  | <input type="checkbox"/>            |
| Recess Torque Test                             | <input type="checkbox"/>            |
| Head Marking                                   | <input checked="" type="checkbox"/> |

### TEST CERTIFICATION

WE CERTIFY THAT THE PART NUMBER, LOT NUMBER, AND SAMPLES REFERENCED ABOVE HAVE BEEN TESTED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATION FOR THE TESTS REPORTED HEREIN. THIS CERTIFICATION SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE APPROVAL OF MAC FASTENERS, INC.

  
 Quality Assurance Representative  
**AS9100, ISO9001 REGISTERED**  
**PJR #C2009-00297**





**Johnstown  
Wire  
Technologies**

124 Laurel Ave,  
Johnstown, PA 15906

Phone: 814-532-5680  
Fax: 814-532-5684

WORK ORDER  
**805016**

**TEST REPORT**  
LOT NUMBER  
**K-8076628**  
SALES ORDER / RLS  
**995305 / 2**

SOLD TO

Mac Fasteners, Inc.  
1110 Enterprise Street  
Ottawa, KS 66067  
USA



|   |                                |                                 |                     |                              |                                    |
|---|--------------------------------|---------------------------------|---------------------|------------------------------|------------------------------------|
| CUSTOMER P.O.<br><b>50516</b>   | CUSTOMER PART                  | QUANTITY<br><b>18,208 LBS</b>   | COILS<br><b>8</b>   | LADING NO<br><b>00104716</b> | SHIPMENT DATE<br><b>06/15/2011</b> |
| <b>SPECIFICATION Macfast-87371</b><br><b>AMS2301; AMS6322; AMS-S-6049A; MIL-S-6049A 8740 DFARS Defense Federal Acquisition Regulation</b><br><b>Supplement Silicon Killed Fine Grain Aircraft Quality/Cold Heading Quality Drawn From Annealed Rod</b><br><b>Spheroidize Annealed in Process Heavy Phos &amp; Light Lube Ctd</b><br><b>Size: .371 +.001 -.000</b> |                                |                                 |                     |                              |                                    |
| <b>CERTIFICATION REQUIREMENTS</b>   |                                |                                 |                     |                              |                                    |
| <b>Chemical</b>   |                                |                                 |                     |                              |                                    |
| <b>C</b><br>.41   | <b>Mn</b><br>.85               | <b>P</b><br>.007                | <b>S</b><br>.009    | <b>Si</b><br>.25             | <b>Al</b><br>.033                  |
| <b>Ni</b><br>.43  | <b>Cr</b><br>.49               | <b>Mo</b><br>.21                | <b>Cu</b><br>.09    | <b>V</b><br>.002             |                                    |
| <b>Cb</b><br>.000   | <b>Ti</b><br>???????           | <b>N</b><br>.0068               | <b>Sn</b><br>.005   |                              |                                    |
| <b>Physical</b>   |                                |                                 |                     |                              |                                    |
| <b>AMS 2301</b><br><b>0000</b>  | <b>J1</b><br>58                | <b>J10</b><br>39                | <b>J11</b><br>37    | <b>J12</b><br>35             | <b>J2</b><br>57                    |
|   |                                |                                 |                     |                              | <b>J3</b><br>56                    |
|   |                                |                                 |                     |                              | <b>J5</b><br>54                    |
|   |                                |                                 |                     |                              | <b>J4</b><br>56                    |
|   |                                |                                 |                     |                              | <b>J6</b><br>53                    |
|   |                                |                                 |                     |                              | <b>J7</b><br>49                    |
|   |                                |                                 |                     |                              | <b>J8</b><br>45                    |
|   |                                |                                 |                     |                              | <b>J9</b><br>42                    |
| <b>MacroClean E-381</b><br><b>111</b>   |                                |                                 |                     |                              |                                    |
| <b>Mechanical</b>   |                                |                                 |                     |                              |                                    |
| <b>TEST</b>   | <b>UNITS</b>                   | <b>HIGH</b>                     | <b>LOW</b>          | <b>AVERAGE</b>               |                                    |
| <b>Tensile Str</b>  | <b>Lbs/SqIn</b>                | <b>82000</b>                    | <b>79000</b>        | <b>80000</b>                 |                                    |
| <b>RA Per Cent</b>  | <b>Percent</b>                 | <b>73.3</b>                     | <b>69.0</b>         | <b>70.5</b>                  |                                    |
| <b>Decarb FFD</b>   | <b>Inches</b>                  | <b>.000</b>                     | <b>.000</b>         | <b>.000</b>                  |                                    |
| <b>Surface def. depth</b>   | <b>Inches</b>                  | <b>.000</b>                     | <b>.000</b>         | <b>.000</b>                  |                                    |
| <b>Rod / Melt Source</b>  |                                |                                 |                     |                              |                                    |
| <b>Rod Source</b><br>Republic   | <b>Melt Source</b><br>Republic | <b>Country of Origin</b><br>USA | <b>Nafta</b><br>Yes |                              |                                    |
| End of Certification  |                                |                                 |                     |                              |                                    |

I certify that the results are a true and correct copy of the records prepared and maintained by JOHNSTOWN WIRE TECHNOLOGIES in compliance with the requirements of the cited specification. Chemistry is as reported by the rod / bar supplier and is not in JWT A2LA accreditation. This test report cannot be reproduced or distributed except in full without the written permission of JOHNSTOWN WIRE TECHNOLOGIES. The test results certified herein relate only to the items tested.

*D. L. Deetscreek*  
**D. L. Deetscreek**  
**Director of Quality Assurance**



# Republic

ENGINEERED PRODUCTS

1807 EAST 28TH ST.  
PHONE: 330-438-5694

LORAIN, OH 44055  
FAX: 330-438-5695

CERTIFICATE OF TESTS

REPUBLIC ENGINEERED PRODUCTS

March 27, 2011  
PAGE 1

OF 2

PURCHASE ORD: 32734  
PART NUMBER: FXT40AA .313  
ORDER NUMBER: 1470795 - 01  
HEAT: 8076628  
CHARGE ADDRESS

PURCHASE ORDER DATE: 12/8/2010  
ACCOUNT NUMBER: 5672-1921-01  
SCHEDULE: 0897-90  
REVISION: 1  
SHIP TO

JOHNSTOWN WIRE TECHNOLOGIES  
124 LAUREL AVE  
JOHNSTOWN, PA 15906

JOHNSTOWN WIRE TECHNOLOGIES  
EDWARD ZAPOLA  
C/O C & BL RAILROAD  
TRACK 629  
JOHNSTOWN, PA 15901

### MATERIAL DESCRIPTION

HOT ROLLED STEEL COILS ALLOY AMS 2301X JOHNSTOWN WIRE SPEC RW-100 REVISION DTD 04/21/04 EXC PARA 10.3 AMS 6322N EXC HARD JOHNSTOWN WIRE SPEC RW-005 REVISION DTD 12/31/00 EXC SURFACE DEFECTS JOHNSTOWN WIRE SPEC PART NO. FXT40AA REVISION DTD 12/31/00 MIL S 6049A & AMD 1 COND B-1 EXC MARK & UP WAIVED BP-AISI-8740-H FINE GRAIN VACUUM DEGAUSED AIRCRAFT QUALITY FIXED PRACTICE QUALITY RESTRICTED CHEMISTRY RESTRICTED MAX INCIDENTAL ELEMENTS  
SIZE: RDS .3130 DIAM X COIL  
RDS 7.9502MM DIAM X COIL

### LABILE CHEMISTRY

| C     | MN   | P     | S     | SI     | CU    | NI     | CR   |
|-------|------|-------|-------|--------|-------|--------|------|
| 0.41  | 0.85 | 0.007 | 0.009 | 0.25   | 0.09  | 0.43   | 0.49 |
| V     | MO   | SN    | AL    | B      | CB    | N      |      |
| 0.002 | 0.21 | 0.005 | 0.033 | 0.0000 | 0.000 | 0.0068 |      |

### CALCULATED TESTS

REDUCTION RATIO 1,690.4 TO 1

AUSTENITIC GRAIN SIZE 5 OR FINER BASED ON A TOTAL ALUMINUM CONTENT EQUAL TO OR GREATER THAN .020% PER ASTM A29.

### SEMI-FINISHED RESULTS

JOMINY HARDNESS TEST SAE J406/ASTM A255  
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 18 20 22 24 26 28 30 32  
58 57 56 56 54 53 49 45 42 39 37 35 34 33 32 31 31 30 29 28 28 28 28 27

MACRO ETCH TEST ASTM E381/MIL STD 430  
ETCHANT: HCL TEMPERATURE: 170  
S R C  
AVG 1 1 1

MAGNETIC PARTICLE TEST AMS 2301 AMS2304 AMS2300  
IND AVG IND AVG  
FREQ FREQ SEV SEV  
PCE 03 0 0 0 0

### FINISHED SIZE RESULTS

DECARBURIZATION TEST SAE J419/ASTM E1077/JIS G0558  
ETCHANT = NITAL MAGNIFICATION = 100X

|          | SPIKE  | COMPLETE | TOTAL  |
|----------|--------|----------|--------|
|          | INCHES | INCHES   | DEPTH  |
|          |        |          | INCHES |
| PCE 3456 | 0.003  | 0        | 0.002  |

G. KRUTH  
DIRECTOR QUALITY ASSURANCE

BY HILDA BEGUE



**Republic**  
ENGINEERED PRODUCTS

1007 EAST 28TH ST.  
PHONE: 330-430-5694

LORAIN, OH 44055  
FAX: 330-430-5695

CERTIFICATE OF TESTS

REPUBLIC ENGINEERED PRODUCTS

March 27, 2011  
PAGE 2

OF 2

PURCHASE ORD: 32734  
PART NUMBER: FXT40AA-.313  
ORDER NUMBER: 1470795 - 01  
HEAT: 0076628

PURCHASE ORDER DATE: 12/8/2010  
ACCOUNT NUMBER: 5672-1921-01  
SCHEDULE: 0897-90  
REVISION: 1

CAPABLE OF SEAM DEPTH 14 MAX DIAMETER NOT LESS THAN .005 MAX

NOTES

CHEMICAL ANALYSIS CONFORMS TO APPLICABLE SPECS: ASTM E415, LBL10129, LBL10130, ASTM E1019, LBL10158, LBL10114, AND ASTM E1085, LBL10184, LBL10188.

REPUBLIC ENGINEERED PRODUCTS HEREBY CERTIFY THAT THE MATERIAL LISTED HEREIN HAS BEEN INSPECTED AND

NOTES (CONTINUED)

TESTED IN ACCORDANCE WITH THE METHODS PRESCRIBED IN THE GOVERNING SPECIFICATIONS AND BASED UPON THE RESULTS OF SUCH INSPECTION AND TESTING HAS BEEN APPROVED FOR CONFORMANCE TO THE SPECIFICATIONS.

CERTIFICATE OF TESTS SHALL NOT BE REPRODUCED EXCEPT IN FULL.

ALL TESTING HAS BEEN PERFORMED USING THE CURRENT REVISION OF THE TESTING SPECIFICATIONS.

RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FED STATUES TITLE 18 CHAPTER 47.

THE MATERIAL WAS NOT EXPOSED TO MERCURY OR ANY METAL ALLOY THAT IS LIQUID AT AMBIENT TEMPERATURE DURING PROCESSING OR WHILE IN OUR POSSESSION.

NO WELD OR WELD REPAIR WAS PERFORMED ON THIS MATERIAL.

THE RESULTS REPORTED RELATE ONLY TO THE ITEMS TESTED

SOURCE INFORMATION

~~MELT SOURCE: CANTON-CAST-ROLL~~ MELT COUNTRY: U.S.A. HOT ROLL SOURCE: LORAIN 9/10, U.S.A.

MELT METHOD: EP BLOOM RED. RATIO: 1690.4

END OF DATA

CC

END OF DATA

WITH SHIPMENT 1 COPY PRINTED AT SHIPPING AREA

FAX SHIP TO 1 COPY ATTENTION EDWARD ZAPOLA

1-814-532-5684

FILE 1 COPY

G. KRUTH  
DIRECTOR QUALITY ASSURANCE

BY HILDA BEQUE

MAC FASTENERS, INC.  
1110 ENTERPRISE  
OTTAWA, KANSAS 66067

## HEAT TREAT CERTIFICATION

CUSTOMER: B/E AEROSPACE

DATE: 10/19/11

PO NUMBER: OBJR08

MANUFACTURED QUANTITY: 1,000

LOT NUMBER: 58713

MATERIAL: TYPE 8740

PART NUMBER: AN6H13A

REVISION: 2

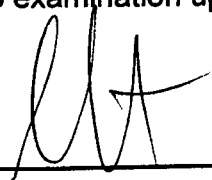
REQUIRED HARDNESS: 26 - 32 HRC

SAMPLE SIZE: 5

HARDNESS: 26-28 HRC

HEAT TREAT SPECIFICATION AS APPLICABLE: MIL-H-6875/AMS-H-6875/AMS2759/AMS5853/PS-1001

The fasteners referenced in this report have been processed, inspected and certified by the Heat Treat Contractor in accordance with all applicable drawings and specifications. Heat Treatment has been verified in accordance with procurement specification and part drawing, by metallurgical and mechanical testing as applicable. Evidence of compliance as well as certification from the Heat Treat Contractor is on file and subject to examination upon request.

  
\_\_\_\_\_  
QUALITY ASSURANCE REPRESENTATIVE

# **DE TRAY**

## **Plating Works**

**Specialized Electro-Plating and Polishing**  
**Nickel**  
**Copper**  
**Decorative Chrome**  
**Satin Chrome**  
**Zinc**  
**Cadmium**  
**Passivate**  
**Bright Dip**  
**Strip Copper**  
**Descale**

**10408 EAST ELEVENTH STREET • INDEPENDENCE, MISSOURI 64052**  
**Phone (816) 252-8411 Fax (816) 252-8527 • E-mail: DeTrayPlating@aol.com**

October 14, 2011

Mac Fasteners  
1110 Enterprise Street  
Ottawa, Kansas 66067

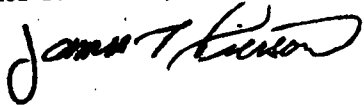
Subject: Certification

This is to certify that the following parts have been electrodeposited cadmium plate per Spec.-QQ-P-416/AMS-QQ-P-416/NAS4160/AMS2400, Type II, Class 2. Please reference our Invoice #156164 dated 10/14/2011 for:

Lot#- 58713

P.N.- AN6H13A

James T. Pierson, Vice-President



DE TRAY PLATING WORKS

CERTIFICATE OF TESTS

ABNAHMEPRUEFZEUGNIS

CERTIFICAT DE CONTROLE

CERT SERIAL# 000644070-



**CARPENTER**

Carpenter Technology Corporation  
101 West Bern Street, Reading, Pa. 19601  
Tel: (610) 208-2000 (800) 338-4592

- THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FEDERAL STATUTES INCLUDING FEDERAL LAW, TITLE 18, CHAPTER 47.
- THE VALUES AND OTHER TECHNICAL DATA REPRESENT THE RESULTS OF ANALYSES AND TESTS MADE ON SAMPLES COLLECTED FROM THE TOTAL LOT. ORIGINAL DATA RECORDS CAN BE TRACED BY REFERENCE TO THE CARPENTER ORDER NUMBER.
- MATERIAL IS MANUFACTURED FREE FROM MERCURY, RADIUM, ALPHA AND GAMMA SOURCE CONTAMINATION.
- THIS DOCUMENT SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN CONSENT OF CARPENTER TECHNOLOGY CORPORATION.

07/02/08

CUSTOMER / BESTELLER / CLIENT

SELLER / VERKÄUFER / VENDEUR PAGE 1 OF 1

MACLEAN - ESNA  
611 COUNTRY CLUB RD  
POCAHONTAS, AR 72455

CARPENTER TECHNOLOGY CORP

101 W. BERN STREET  
READING, PA 19601

*Handwritten:* hmp 26457  
PO 17162  
3/4 nomkey

| CUSTOMER ORDER NO./BESTELL-NR./N° DE COMMANDE | CARPENTER NO./WERKS-NR./N° DE REFERENCE INTERNE | DATE/DATUM/DATE | WEIGHT/GEWICHT/POIDS |
|---|---|-----------------|----------------------|
| 17162 39223-000                               | CHI175901 L11939                                | 07/02/08        | 3992.000             |

HEAT NUMBER / SCHMELZE-NR. / N° DE COULEE: 736973

PRODUCT DESCRIPTION: PROJECT 70+ TYPE 303 STAINLESS ANNEALED COLD DRAWN

SPECIFICATION: AMS 5640 REV U (10/ /07) (TYPE 1)  
ASTM-A582-05

SIZE 0.750000 IN. ( 19.05 MM) HEX BAR

PRIMARY HEAT CHEMISTRY(WT%): (TEST METHOD IS SHOWN IN PARENTHESIS)

|               |               |               |              |              |                |
|---------------|---------------|---------------|--------------|--------------|----------------|
| C (COM) 0.02  | MN (XRF) 1.72 | SI (XRF) 0.38 | P (XRF) 0.02 | S (COM) 0.38 | CR (XRF) 17.34 |
| NI (XRF) 9.65 | MO (XRF) 0.54 | CU (XRF) 0.92 |              |              |                |

MATERIAL PRODUCED ON THIS ORDER WAS MELTED AND MANUFACTURED IN THE U.S.A.

THIS MATERIAL WAS MANUFACTURED IN ACCORDANCE WITH CARPENTER SPECIALTY ALLOYS OPERATIONS QUALITY PROGRAM MANUAL REVISION 27, DATED 1/08.

NO WELD REPAIR.

SOLUTION ANNEALED TO PROVIDE A MICROSTRUCTURE FREE FROM CONTINUOUS GRAIN BOUNDARY CARBIDE PRECIPITATION (NETWORK).

MAX PERMEABILITY - 1.20

HARDNESS AS SHIPPED, HBW - 226 (MIDRADIUS)

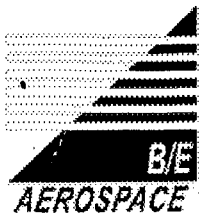
|                                   |            |
|-----------------------------------|------------|
| YIELD STRENGTH, (0.20 %) KSI(MPA) | 77.0( 531) |
| TENSILE STRENGTH, KSI(MPA)        | 98.0( 676) |
| ELONGATION IN 2.00", %            | 32.0       |
| REDUCTION OF AREA, %              | 54.0       |

MATERIAL PRODUCED ON THIS ORDER WAS MELTED AND MANUFACTURED IN THE U.S.A. MATERIAL HAS BEEN MELTED IN USA OR QUALIFYING COUNTRY TO DFARS REQUIREMENTS 252.225-7014 WITH ALTERNATE 1 FOR QUALIFYING COUNTRY 225.872.1. CARPENTER'S QUALITY MANAGEMENT SYSTEM WAS REGISTERED AS OF SEPTEMBER 2, 2004 TO THE REQUIREMENTS OF ISO 9001:2000 APPROVAL CERTIFICATE 07-0869 BY PERFORMANCE REVIEW INSTITUTE. CERTIFICATE OF TEST IS PREPARED IN ACCORDANCE WITH PARAGRAPH 3.1 OF EN 10204 (DIN 50049). WE HEREBY CERTIFY THAT THE ABOVE TEST DATA ARE IN ACCORDANCE WITH THE PURCHASE ORDER AND SPECIFICATION REQUIREMENTS.

MICHELE L. HEFFNER  
MET RELEASE/REQUIREMENTS ANALYST  
CARPENTER TECHNOLOGY CORPORATION

*Handwritten signature:* Michele L. Heffner

1080010750



# B/E Aerospace, Inc.

Page: 1 of 1

## CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO25711**

| LINE# | QUANTITY | U/M | PART-NUMBER | CUST REF# | LOT-NUMBER | MANUFACTURER | CCODE | MFR DATE | EXP DATE |
|-------|----------|-----|-------------|-----------|------------|--------------|-------|----------|----------|
| 11    | 100      | EA  | MS21047-3   |           | 56912      | PAOLO ASTORI | A3856 |          |          |

  
Jason Lewis  
Vice President of Quality

09/11/14

**PAOLO ASTORI SPA**

Via Mirabella, 9 - Maggiate Superiore  
28013 Gattico (NO) - ITALY  
Tel. (+39) 0322 838847  
Fax (+39) 0322 880198  
Web: www.paoloastori.com

**CERTIFICATE OF CONFORMANCE****N° 3690****Date 18/04/2014** Pag. 1 / 1**Purchased by:**

B/E AEROSPACE INC.CONSUMABLES MANAG  
10000 NW 15TH TERRACE  
MIAMI - FL  
USA

**Shipped to:**

B/E AEROSPACE INC.CONSUMABLES MANAG  
9835 NW 14TH ST.

33172 MIAMI - FL US

*This is to certify that goods listed below have been inspected in our plant and are up to your orders and to the specifications of the drawings mentioned therein.*

*Country of origin is ITALY.*

| Pos. | Part Number          | Purchase Order | PO Date    | Quantity | U.M. | Batch # | Cure Date<br>Expiry Date |
|------|----------------------|----------------|------------|----------|------|---------|--------------------------|
| 1    | MS21047-3(Rev. REV3) | OKJF24         | 15/08/2012 | 754      | N    | 56912   |                          |
| 2    | MS21047-3(Rev. REV3) | OKJF24         | 15/08/2012 | 8000     | N    | 56912   |                          |
| 3    | MS21047-3(Rev. REV3) | OKJF24         | 15/08/2012 | 8000     | N    | 56912   |                          |
| 4    | MS21047-3(Rev. REV3) | OKJF24         | 15/08/2012 | 8000     | N    | 56912   |                          |
| 5    | MS21047-3(Rev. REV3) | OKJF24         | 15/08/2012 | 8000     | N    | 56912   |                          |
| 6    | MS21047-3(Rev. REV3) | OKJF24         | 15/08/2012 | 8000     | N    | 56912   |                          |
| 7    | MS21047-3(Rev. REV3) | OKJF24         | 15/08/2012 | 8000     | N    | 56912   |                          |
| 8    | MS21047-3(Rev. REV3) | OKJF24         | 15/08/2012 | 8000     | N    | 56912   |                          |
| 9    | MS21047-3(Rev. REV3) | OKJF24         | 15/08/2012 | 8000     | N    | 56912   |                          |
| 10   | MS21047-3(Rev. REV3) | OKJF24         | 15/08/2012 | 8000     | N    | 56912   |                          |
| 11   | MS21047-3(Rev. REV3) | OKJF24         | 15/08/2012 | 8000     | N    | 56912   |                          |
| 12   | MS21047-3(Rev. REV3) | OKJF24         | 15/08/2012 | 8000     | N    | 56912   |                          |

- SUPPLIES RELEASED IN ACCORDANCE WITH REQUIREM. OF BAE/AG/SC1 PART 1. APPROVAL # BAE/AG/30631/MAA AND WITH AIRBUS SAS APPROVAL # 204788 Se sotto 150 lbs sped con fedex ground, account #0331-0149-0, mark: collect; se sopra 150 lbs sped con fedex economy, account #018757

Airbus approval # 204788 - BAE Approval # BAE/AG/30631/MAA - Complies with DFARS 252.225-7014.  
Agusta-Westland Q500 approval # A/0047

All claims regarding the parts in subject must be reported to seller promptly. Credit or replacement of parts may be limited to those parts for which traceability has been maintained by the buyer. The seller manufacturing lot identification number and return authorization (RMA) must accompany all returns. Any discrepancy claimed by the Customer must be made in writing to seller not later than ninety (90) days after the shipping date. The liability of seller on parts found to be defective is limited to replacement or rework of such goods, at seller option, and in no case is to exceed the invoice value of such goods. Under no circumstance will seller be liable for damages or cost incurred by buyer or subsequent user beyond the invoiced value of the parts in subject.





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QUALITY SYSTEM  
CERTIFIED BY DNV  
= AS/EN/JISQ 9100 =

## QUALITY CONFORMANCE INSPECTION REPORT

Sede legale: via Mirabella, 9 - MAGGIATE Sup. - 28013 GATTICO (NO) ITALY - TEL: 0322-838847 FAX: 0322-880198 [www.paoloastori.com](http://www.paoloastori.com)

### STATEMENT OF CONFORMITY

THIS IS TO CERTIFY THAT PARTS HAVE BEEN PRODUCED, CONTROLLED AND ACCEPTED  
ACCORDING TO THE REQUIREMENTS OF THE APPLICABLE SPECIFICATION CALLED BY THE PURCHASE  
ORDER AND/OR THE APPLICABLE STANDARD DRAWING.  
MATERIAL, HEAT AND SURFACE TREATMENTS AND MANUFACTURING PROCESSES ARE THE SAME AS  
THOSE USED FOR THE QUALIFICATION APPROVAL.  
SAMPLES SUBJECT OF ALL TESTS WERE BEEN SELECTED AT RANDOM FROM THE PRODUCTION BATCH  
COVERED BY THIS DOCUMENT. COUNTRY OF ORIGIN ITALY.  
THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF  
PAOLO ASTORI SPA.

*Samuele Calchi*

Signature  
Quality Representative



|                    |   |
|--------------------|---|
| CUSTOMER           | <u>see attached COC</u>                               |
| P.O.               | <u>see attached COC</u>                               |
| PART NO.           | <u>MS21047-3 per NASM21047 REV SEE COC / NAS680X3</u> |
| ASTORI CODE        | <u>10AD25A302N21</u>                                  |
| DESCRIPTION        | <u>NUT SELF-LOCKING PLATE TWO LUG</u>                 |
| PROCUREMENT SPEC.  | <u>NASM25027</u>                                      |
| BATCH NO.          | <u>56912</u>  |
| BATCH QUANTITY     | <u>385.000</u>  |
| QUANTITY DELIVERED | <u>see attached COC</u>                               |

| Description of component | Raw material specification | Raw material Batch no. | Heat N°  | Heath treatment performed | Raw material in accordance with |
|--------------------------|----------------------------|------------------------|----------|---------------------------|---------------------------------|
| NUT                      | SAE1042                    | -3251                  | 000B1797 | hardening & tempering     | ASTM A29                        |
| OTHER                    |                            |                        |          |                           |                                 |
| OTHER                    |                            |                        |          |                           |                                 |
| OTHER                    |                            |                        |          |                           |                                 |

All claims regarding the parts in subject must be reported to seller promptly. Credit or replacement of parts may be limited to those parts for which traceability has been maintained by the buyer. The seller's manufacturing lot identification number and return authorization (RMA) must accompany all returns. Any discrepancy claimed by the Customer must be made in writing to seller not later than ninety (90) days after the shipping date. The liability of seller on parts found to be defective is limited to replacement or rework of such goods, as seller option, and in no case is to exceed the invoice value of such goods. Under no circumstance will seller be liable for damages or cost incurred by buyer or subsequent user beyond the invoice value of the parts in subject.

Date: 10/04/14

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### SUMMARIZED TEST RESULTS

(all tolerances are expressed in metric and imperial units - test results are recorded as read on the MTE)

| Characteristic  | Inspection or test to be Performed  | Applicable or not | Sample Inspected | Inspection Media   | Test Result | Note                       |
|---|---|-------------------|------------------|--------------------|-------------|----------------------------|
| Examination of product:   |   |                   |                  |                    |             |                            |
| Design  | Verify the design of the nut  | A                 | ALL              | VISUAL             | OK          |                            |
| Self-locking device (Major A)                                   | Examination   | A                 | 80               | VISUAL             | OK          | see table 1                |
| Thread fit (Major B)  | Go-no go gauge - test bolt application  | A                 | 32               | BOLT GO-GAGE       | OK          | see table 2                |
| Bearing surface conditions and squareness (Major B)             | Check surface roughness and orthogonality error   | A                 | 32               | OPTICAL COMPARATOR | OK          | see table 3                |
| Surface finish, plating or surface treatment (Major B)          | Verify the compliance of the surface treatment and condition  | A                 | 32               | VISUAL             | OK          | see table 4                |
| Rivet hole location and alignment (Major B)                     | Measure the position and the distance   | A                 | 32               | DIGITAL CALIPER    | OK          | see table 5                |
| Height of nut (Major B)   | Measure the dimension   | A                 | 32               | DIGITAL CALIPER    | OK          | see table 6                |
| Loose or hanging burrs (Minor)                                  | Verify the presence of any kind of burrs  | A                 | 13               | VISUAL             | OK          | see table 7                |
| All other dimensional characteristics not covered above (Minor) | Measure all dimensions with reference on the applicable standard                                    | A                 | 13               | DIGITAL CALIPER    | OK          | see table 8 see attachment |
| Axial Tensile strength (Table IX)                               | Verify if the nuts withstand the minimum axial strength   | A                 | 27               | LOAD MACHINE       | OK          | see table 9                |
| Locking torque  | See below   |                   |                  |                    |             |                            |
| Max locking torque (Table IX)                                   | Measure and record the torque value for 1st, 7th, 15th of each nut tested                           | A                 | 27               | LOAD MACHINE       | OK          | see table 10               |
| Min breakaway torque (Table IX)                                 | Measure and record the torque value for 1st, 7th, 15th of each nut tested                           | A                 | 27               | TORQUE METER       | OK          | see table 11               |
| Torque out (Table IX)   | Torque out value must be not less than the requested value (attribute)                              | N/A               | -                | TORQUE METER       | OK          | see table 12               |
| Push out (Table IX)   | Push out value must be not less than the requested value (attribute)                                | A                 | 27               | LOAD MACHINE       | OK          | see table 13               |
| Discontinuities (Major B)                                       | No cracks at all - Depths of discontinuities not more than values                                   | A                 | 32               | VISUAL             | OK          | see table 14               |
| 23-hour stress embrittlement (10 pcs)                           | Evidence of complete absence of stress embrittlement (attribute)                                    | A                 | 10               | VISUAL             | OK          | see table 15               |
| Magnetic permeability (Table IX)                                | Cres nuts must have less a magnetic permeability less than 2.0 in air for a field strength of H=200 | N/A               | -                | LOW MU INDICATOR   | OK          | see table 16               |
| Inspection of packaging (All boxes)                             | Verify the correctness of packaging   | A                 | ALL              | VISUAL             | OK          | see table 17               |



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Table 1 - Self locking device - examination (control by attribute : ok/not ok)

|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK |
| OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK |
| OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK |
| OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK |
| OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK |

Table 2 - Thread fit (control by attribute : go-nego gage ok/not ok - bolt application)

|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK |
| OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK |

Table 3 - Bearing surface max. squareness deviation admitted 0,13 mm ( 0,0051 in ) max. measured 0,06 mm ( 0,0023 in )  
Surface roughness max. value admitted 3,2 (125 micro in) max. measured 1,6 (63 micro in)

|      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 0,06 | 0,05 | 0,05 | 0,03 | 0,03 | 0,03 | 0,04 | 0,04 | 0,05 | 0,04 | 0,04 | 0,05 | 0,04 | 0,06 | 0,04 | 0,04 |
| 0,05 | 0,04 | 0,06 | 0,05 | 0,05 | 0,05 | 0,06 | 0,04 | 0,06 | 0,05 | 0,03 | 0,04 | 0,03 | 0,05 | 0,06 | 0,05 |
| 1,6  | 1,6  | 1,6  | 1,6  | 1,6  | 1,6  | 1,6  | 1,6  | 1,6  | 1,6  | 1,6  | 1,6  | 1,6  | 1,6  | 1,6  | 1,6  |
| 1,6  | 1,6  | 1,6  | 1,6  | 1,6  | 1,6  | 1,6  | 1,6  | 1,6  | 1,6  | 1,6  | 1,6  | 1,6  | 1,6  | 1,6  | 1,6  |

Table 4 - Surface finish, plating or surface treatment (control by attribute : ok/not ok)

Actual finishing CADMIUM PLATED IN ACC WITH AMS-QQ-P-416 TYPE II CLASS 2

|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK |
| OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK |

Table 5 - Rivet hole location and alignment.

Dimension requested 17,48 +/-0,05 mm ( 0,688 +/-0,002 in ) max. range measured 17,49 mm ( 0,689 in )

|       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 17,48 | 17,48 | 17,49 | 17,48 | 17,48 | 17,49 | 17,49 | 17,47 | 17,48 | 17,47 | 17,48 | 17,48 | 17,47 | 17,49 | 17,47 | 17,48 |
| 17,48 | 17,48 | 17,49 | 17,48 | 17,48 | 17,48 | 17,48 | 17,48 | 17,49 | 17,49 | 17,48 | 17,47 | 17,48 | 17,48 | 17,47 | 17,48 |

Table 6 - Height of nut Dimension requested 6,35 mm max ( 0,250 in max ) max. range measured 5,55 mm ( 0,219 in )

|      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 5,44 | 5,55 | 5,46 | 5,45 | 5,46 | 5,45 | 5,45 | 5,44 | 5,44 | 5,45 | 5,46 | 5,45 | 5,46 | 5,45 | 5,45 | 5,52 |
| 5,49 | 5,43 | 5,46 | 5,48 | 5,40 | 5,48 | 5,40 | 5,48 | 5,49 | 5,48 | 5,42 | 5,46 | 5,40 | 5,48 | 5,55 | 5,48 |

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**Table 7 - Loose or hanging burrs (control by attribute by means visual examination ok/not ok)**

**Table 8 - All other dimensional characteristics not covered above (reference on the tolerances of the applicable standard dwg)**

**Table 9- Axial Tensile strength - Minimum load requested** 10946 N ( 2463 lb ) max. measured 11350 N ( 2554 lb )

**Max. installation torque admitted** 2,03 Nm ( 17,97 in-lb) max. measured 2,09 Nm ( 18,50 in-lb)

Min. breakaway torque requested 0,23 Nm ( 2,04 *in-lb*) min. measured 0,41 Nm ( 3,63 *in-lb*)

**Table12-Torque out-Minimum requested value** (control by attribute :ok/not ok) N/A

**Table 13- Push out -Minimum requested value 445 N ( 100 lb ) (control by attribute :ok/not ok) 510 N ( 115 lb )**

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Table 14- Discontinuities-No cracks at all-no discontinuities with depth more than 0.13 mm (control by attribute : ok/not ok)  
NDT MAGNETIC INSPECTION per ASTM-E-1444

|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK |
| OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK |

Table 15 - 23-hour stress embrittlement (control by attribute : ok/not ok)

|    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|
| OK | OK | OK | OK | OK | OK | OK | OK | OK | OK |
|----|----|----|----|----|----|----|----|----|----|

Table 16- Magnetic permeability - (control by attribute : ok/not ok)/N/A

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|

Table 17- Inspection of packaging - (control of beach package unit of the shipment : ok/not ok with respect to the order requirements)

|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK |
| OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK |

## SAMPLING TABLES

TABLE FOR MAJOR A CHARACTERISTICS

| BATCH SIZE        | SAMPLE SIZE | AN | RN |
|-------------------|-------------|----|----|
| <35,000           | 50          | 0  | 1  |
| 35,000<Q<150,000  | 80          | 0  | 1  |
| 150,000<Q<500,000 | 80          | 0  | 1  |

TABLE FOR MAJOR B CHARACTERISTICS

| BATCH SIZE        | SAMPLE SIZE | AN | RN |
|-------------------|-------------|----|----|
| <35,000           | 20          | 0  | 1  |
| 35,000<Q<150,000  | 32          | 0  | 1  |
| 150,000<Q<500,000 | 32          | 0  | 1  |

TABLE FOR MINOR CHARACTERISTICS

| BATCH SIZE        | SAMPLE SIZE | AN | RN |
|-------------------|-------------|----|----|
| <35,000           | 8           | 0  | 1  |
| 35,000<Q<150,000  | 13          | 0  | 1  |
| 150,000<Q<500,000 | 13          | 0  | 1  |

TABLE IX

| BATCH SIZE       | SAMPLE SIZE | AN | RN |
|------------------|-------------|----|----|
| <50,000          | 10          | 0  | 1  |
| 50,000<Q<100,000 | 15          | 0  | 1  |
| Q>100,000        | 27          | 0  | 1  |

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(NO) ITALY TEL: 0322-838847 FAX: 0322-880196  
www.paoloastori.com

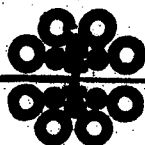
MS21047-3

Q.C.I.R

SEE TABLE 8

| BATCH NO. | DATE     | VALUE    | DIMENSION REQUESTED | DIMENSION MEASURED |       |       |       |       |       |       |  | SIGNATURE                             |
|-----------|----------|----------|---------------------|--------------------|-------|-------|-------|-------|-------|-------|--|---------------------------------------|
| 56912     | 10/04/14 | A        | 24.08 mm MAX        | 23,09              | 23,07 | 23,12 | 23,06 | 23,07 | 23,11 | 23,10 |  | TESTED WITH PLUG GAGE                 |
|           |          |          |                     | 23,09              | 23,08 | 23,12 | 23,12 | 23,12 | 23,11 |       |  |                                       |
|           |          | B        | 7.82 - 8.33 mm      | 8,09               | 8,09  | 8,10  | 8,11  | 8,09  | 8,08  | 8,10  |  |                                       |
|           |          |          |                     | 8,11               | 8,12  | 8,10  | 8,09  | 8,08  | 8,10  |       |  |                                       |
|           |          | K        | 2.49 - 2.62 mm      | 2,61               | 2,61  | 2,58  | 2,59  | 2,60  | 2,58  | 2,60  |  |                                       |
|           |          |          |                     | 2,61               | 2,58  | 2,60  | 2,58  | 2,59  | 2,60  |       |  |                                       |
|           |          | H        | 6.35 mm MAX         | 5,44               | 5,44  | 5,46  | 5,45  | 5,46  | 5,45  | 5,45  |  |                                       |
|           |          |          |                     | 5,44               | 5,45  | 5,48  | 5,45  | 5,46  | 5,45  |       |  |                                       |
|           |          | J        | 17.48 +/- 0.05 mm   | 17,48              | 17,49 | 17,48 | 17,48 | 17,49 | 17,48 | 17,47 |  |                                       |
|           |          |          |                     | 17,48              | 17,49 | 17,47 | 17,48 | 17,48 | 17,48 |       |  |                                       |
|           |          | V        | 1.19 mm MAX         | 0,94               | 0,95  | 0,95  | 0,94  | 0,93  | 0,94  | 0,95  |  | LO = LONGITUDINALLY<br>LA = Laterally |
|           |          |          |                     | 0,95               | 0,94  | 0,94  | 0,94  | 0,95  | 0,94  |       |  |                                       |
|           |          | HR       | Hardness HRC 49 max | 40,37              | 42,88 |       |       |       |       |       |  |                                       |
|           |          |          |                     |                    |       |       |       |       |       |       |  |                                       |
|           |          |          |                     |                    |       |       |       |       |       |       |  |                                       |
|           |          | FLOATING | LO/LA NA AXIAL NA   |                    |       |       |       |       |       |       |  |                                       |
|           |          |          |                     |                    |       |       |       |       |       |       |  |                                       |

C  
24



**GIUSEPPE & F.lli BONAITI S.p.A.**  
NASTRO E FILO DI ACCIAIO

Sede legale e amministrativa:  
Piazza Verdi, 3/A  
23901 CALOLZIOCORTE (LC)  
tel. 0341 633080 fax 0341 633081  
Internet: [www.bonaitigiuseppe.it](http://www.bonaitigiuseppe.it)  
e-mail: [info@bonaitigiuseppe.it](mailto:info@bonaitigiuseppe.it)

## CERTIFICATO DI CONTROLLO

(Tipo 3.1 secondo norme EN 10204:2004)

Nr. **1134** del **30/01/14**

Spett.  
**PAOLO ASTORI SPA**  
**VIA MIRABELLA 9**  
**28013 MAGGIATE SUPERIORE NO**

Va.Ord. 24878 del 29/11/12  
Nu.Com. 330692927-01 del 12/09/13  
DBT N. **456** del **30.1.14**

PRODOTTO Cod.  
NASTRO CISE SAE1042 MM.21, C20, 86

PAOLO ASTORI SPA

**-3251**

RAW MATERIAL LOT

### RISULTATI PROVE

FOGLIO DI LAVORAZIONE

FOL LA 2013 008841

Documento N. 189 del 29/01/14

Prova

RESISTENZA A TRAZIONE N/MM2 495  
ALLUNGAMENTO % ASOMM. 27,56  
CARICO UNIT.SCOST.PROP. RP0.2 328,00  
PIEGAMENTO TRASVERSALE 180° NO ROTTURA

Prova

RESISTENZA A TRAZIONE N/MM2 500  
ALLUNGAMENTO % ASOMM. 28,39  
CARICO UNIT.SCOST.PROP. RP0.2 348,00  
PIEGAMENTO TRASVERSALE 180° NO ROTTURA

Certifichiamo che il prodotto è conforme alle richieste della conferma d'ordine.

LABORATORIO PROVE

A. PUZZU

### ANALISI COLATA

(Verifica effettuata dal fornitore materia prima)

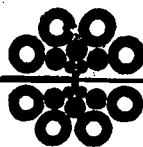
Colata 00001797

L. 41618 / 083 . E

| C     | Mn    | Si    | P     | S     | Al    | Cr    | Cu    | Ni    | Mo    |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0,480 | 0,690 | 0,240 | 0,010 | 0,002 | 0,021 | 0,230 | 0,027 | 0,030 | 0,006 |

ALCANTARA 28V2

Cap. Soc. € 1.200.000,00 i.v.  
Cod. Fisc. Reg. Imprese e Part. I.V.A. IT00217830189  
C.G.I.A.A. LC 40886 - Mecc. LC 000863  
Stabilimenti di produzione: Calolziocorte (LC) - Palazzago (BG)



**GIUSEPPE & F.lli BONAITI S.p.A.**  
NASTRO E FILO DI ACCIAIO

Sede legale e amministrativa:  
Piazza Verdi, 3/A  
23801 CALOLZIOCORTE (LC)  
tel. 0341 633080 fax 0341 633081  
Internet: www.bonaitigruppo.it  
e-mail: info@bonaitigruppo.it

## CERTIFICATO DI CONTROLLO

(Tipo 3.1 secondo norma EN 10204:2004)

Nr. del  
**1134 30/01/14**

Spett.  
**PAOLO ASTORI SPA**  
**VIA MIRABELLA 9**  
**23013 MAGGIATE SUPERIORE NO**

Vs. Ord. 24878 del 20/11/12  
Nr. Com. 33/002027-01 del 12/09/13  
DDT N. **456** del **30.1.14**

PRODOTTO Cod.  
**NASTRO C45E SAE1042 MM.21,0X0,06**

**PAOLO ASTORI SPA**

**-3251**

### RISULTATI PROVE

**RAW MATERIAL LOT**

FOGLIO DI LAVORAZIONE

FDL LA 2013 005841

Documento N. 199 del 29/01/14

Prova

RESISTENZA A TRAZIONE N/MM2 495

ALLUNGAMENTO % A80MM. 27,56

CARICO UNIT.SCOST.PROP. RP0.2 328,00

PIEGAMENTO TRASVERSALE 180° NO ROTTURA

Prova

RESISTENZA A TRAZIONE N/MM2 500

ALLUNGAMENTO % A80MM. 28,39

CARICO UNIT.SCOST.PROP. RP0.2 348,00

PIEGAMENTO TRASVERSALE 180° NO ROTTURA

Certifichiamo che il prodotto è conforme alle richieste della conferma d'ordine.

LABORATORIO PROVE

A. Putzu

### ANALISI COLATA

(Verifica effettuata dal fornitore materia prima)

Colata 000B1797

L. 41618 / 083 . E

| C     | Mn    | Si    | P     | S     | Al    | Cr    | Cu    | Ni    | Mo    |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0,460 | 0,690 | 0,240 | 0,010 | 0,002 | 0,021 | 0,230 | 0,027 | 0,039 | 0,006 |

MOD. 100 REV.2





# B/E Aerospace, Inc.

Page: 1 of 1

## CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO25711**

| LINE# | QUANTITY | U/M | PART-NUMBER | CUST REF# | LOT-NUMBER | MANUFACTURER  | CCODE | MFR DATE | EXP DATE |
|-------|----------|-----|-------------|-----------|------------|---------------|-------|----------|----------|
| 2     | 1000     | EA  | AN3C5A      |           | 68635      | MAC FASTENERS | ORFT4 |          |          |

  
Jason Lewis  
Vice President of Quality

09/11/14

**MAC FASTENERS, INC.**  
**1110 ENTERPRISE**  
**OTTAWA, KANSAS 66067**

**CERTIFICATE OF CONFORMANCE  
AND  
MANUFACTURER'S AFFIDAVIT**

CUSTOMER: B/E AEROSPACE

PO: 0RJS95

PART NUMBER: AN3C5A

REV: 3

LOT NUMBER: 68635

MANUFACTURED QUANTITY: 20,000

MILL HEAT NUMBER: 568597

COUNTRY OF ORIGIN: UNITED STATES OF AMERICA

DFARS 252.225.7009 Compliant

**MERCURY FREE CERTIFICATION**

MacFasteners certifies that the parts referenced in the above lot number  
do not contain Mercury or Mercury compounds, and were  
manufactured in a Mercury free environment.

We certify that the parts furnished against the above referenced purchase order were manufactured by MAC FASTENERS within the United States, and were processed in accordance with all applicable drawings and specifications. Objective evidence of compliance is on file, subject to examination upon request.

Mac Fasteners is an AS9100C Registered Company - SAI GLOBAL - 0058029  
Mac Fasteners is a DISC QSLM approved Manufacturer - CAGE Code 0RFT4  
Mac Fasteners is an Airbus approved Supplier - 203399

DATE: 07/07/14

  
QUALITY ASSURANCE REPRESENTATIVE

**MAC FASTENERS, INC.**  
**1110 EAST ENTERPRISE**  
**OTTAWA, KS 66067**

## CHEMICAL & PHYSICAL TEST REPORT

|                           |                     |                        |                              |
|---------------------------|---------------------|------------------------|------------------------------|
| CUSTOMER<br>B/E AEROSPACE | PO NUMBER<br>0RJS95 | MFG QUANTITY<br>20,000 | DATE<br>07/07/14             |
| PART NUMBER<br>AN3C5A     | REV<br>3            | LOT NO<br>68635        | PROCUREMENT SPEC<br>NASM6812 |

|                      |           |           |           |                                     |    |            |            |                            |    |   |                       |       |    |
|----------------------|-----------|-----------|-----------|-------------------------------------|----|------------|------------|----------------------------|----|---|-----------------------|-------|----|
| MATERIAL<br>TYPE 431 |           |           |           | MATERIAL SPECIFICATION<br>ASTM A493 |    |            |            | MILL HEAT NUMBER<br>568597 |    |   | SUPPLIER<br>CARPENTER |       |    |
| C<br>.17             | Si<br>.48 | Mn<br>.65 | P<br>.019 | S<br>.001                           | Cu | Ni<br>1.58 | Cr<br>15.9 | Mo                         | V  | B | Fe                    | Al    | Ti |
|                      | Co        | N         | Bi        | Pb                                  | Mg | Zn         |            | Nb                         | Sn |   |                       | Other |    |

### MECHANICAL TEST RESULTS - TESTING PER NASM1312

| ULTIMATE TENSILE STRENGTH<br>POUNDS |       |
|-------------------------------------|-------|
| 3,420                               |       |
| 3,510                               |       |
| 3,440                               |       |
| 3,420                               |       |
| 3,470                               |       |
| MIN. REQ.                           | 2,210 |

| DOUBLE SHEAR STRENGTH<br>POUNDS / PSI |  |
|---------------------------------------|--|
| TOO SHORT TO TEST PER<br>NASM1312-13  |  |
| MIN. REQ.                             |  |

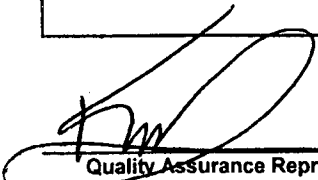
| HARDNESS           |             |
|--------------------|-------------|
| ROCKWELL "C" SCALE |             |
| REQ.               | 26 - 32 HRC |
| SAMPLE SIZE        | 5           |
| ACTUAL RESULTS     |             |
| 26 - 31 HRC        |             |

| METALLURGICAL EXAMINATION                       |                                     |   |                                     |
|---|-------------------------------------|---|-------------------------------------|
| Discontinuities                                 | <input checked="" type="checkbox"/> | Carb/Decarb                                   | <input type="checkbox"/>            |
| Grain Flow                                      | <input checked="" type="checkbox"/> | Microstructure                                | <input checked="" type="checkbox"/> |
| Grain Size                                      | <input checked="" type="checkbox"/> | Appearance                                    | <input checked="" type="checkbox"/> |
| Thread Inspection<br>FED-STD-H28/20 - ASME B1.3 | System <input type="checkbox"/> 21  | System <input checked="" type="checkbox"/> 22 | System <input type="checkbox"/> 23  |

| NDT/ ADDITIONAL TESTS                            |                                     |
|--|-------------------------------------|
| Magnetic Particle Inspection per<br>ASTM E1444   | <input type="checkbox"/>            |
| Liquid Penetrant Inspection per<br>ASTM E1417    | <input type="checkbox"/>            |
| Recess Torque Test                               | <input type="checkbox"/>            |
| Head Marking                                     | <input checked="" type="checkbox"/> |
| Magnetic Permeability<br>ASTM A342 less than 2.0 | <input checked="" type="checkbox"/> |

### TEST CERTIFICATION

WE CERTIFY THAT THE PART NUMBER, LOT NUMBER, AND SAMPLES REFERENCED ABOVE HAVE BEEN TESTED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATION FOR THE TESTS REPORTED HEREIN. THIS CERTIFICATION SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE APPROVAL OF MAC FASTENERS, INC.

  
 Quality Assurance Representative

**AS9100C REGISTERED**  
**SAI GLOBAL - 0058029**

# DE TRAY Plating Works

Specialized Electro-Plating and Polishing  
Nickel  
Copper  
Decorative Chrome  
Satin Chrome  
Zinc  
Cadmium  
Passivate  
Bright Dip  
Strip Copper  
Descale

10405 EAST ELEVENTH STREET • INDEPENDENCE, MISSOURI 64052  
Phone (816) 252-8411 Fax (816) 252-8527 • E-mail : DeTrayPlating@Aol.com

Passivate Treatment per QQ-P-35C/SAE AMS QQ-P-35/ASTM-A380/AMS2700

CUSTOMER: Mac Fasteners Lot#: 68635  
PART NUMBER: AN3C5A  
PROCUREMENT SPECIFICATION: n/a  
OTHER CONTRACTURAL REQUIREMENTS:  
MATERIAL: 431  
QUANTITY: 165 lbs  
INVOICE NUMBER: 180962

## Certification Statement:

We certify that the above referenced lot was processed, tested, and inspected in accordance with QQ-P-35C/SAE AMS QQ-P-35/ASTM-A380/AMS2700 and part standard.

DE TRAY PLATING WORKS

NAME:

JAMES V. LEE  
JOB TITLE: VICE-PRESIDENT

DATE: 7/02/2014

CERTIFICATE OF TESTS  
CERT SERIAL# 000879077

ABNAHMEPRUEFZEUGNIS

CERTIFICAT DE CONTROLE



**CARPENTER**

Carpenter Technology Corporation  
101 West Bern Street, Reading, Pa. 19601  
Tel: (610) 208-2000 (800) 338-4592

- THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FEDERAL STATUTES INCLUDING FEDERAL LAW, TITLE 18, CHAPTER 47.
- THE VALUES AND OTHER TECHNICAL DATA REPRESENT THE RESULTS OF ANALYSES AND TESTS MADE ON SAMPLES COLLECTED FROM THE TOTAL LOT. ORIGINAL DATA RECORDS CAN BE TRACED BY REFERENCE TO THE CARPENTER ORDER NUMBER.
- MATERIAL IS MANUFACTURED FREE FROM MERCURY, RADIUM, ALPHA AND GAMMA SOURCE CONTAMINATION.
- THIS DOCUMENT SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN CONSENT OF CARPENTER TECHNOLOGY CORPORATION.

06/10/13  
CUSTOMER/BESTELLER/CLIENT

SELLER/VERKÄUFER/VENDEURPAGE 1 OF 1

MAC FASTENERS INC

1110 E. ENTERPRISE  
OTTAWA KS 66067

BOL

| CUSTOMER ORDER NO./BESTELL-NR./N° DE COMMANDE | CARPENTER NO./WERKS-NR./N° DE REFERENCE INTERNE | DATE/DATUM/DATE | WEIGHT/GEWICHT/POIDS |
|---|---|-----------------|----------------------|
| 81050   | W72447  | 06/10/13        | 2395.000             |

HEAT NUMBER / SCHMELZE-NR. / N° DE COULEE : 568597

PRODUCT DESCRIPTION: TYPE 431 COLD FINISH SEAM FREE ANNEALED C HDG CL K1 HVY  
----- CU TENSILE MAX 100.0 KSI

SPECIFICATION: ASTM-A493-09  
-----

SIZE 0.187500 IN. ( 4.76 MM) RD WIRE

PRIMARY HEAT CHEMISTRY (WT%): (TEST METHOD IS SHOWN IN PARENTHESIS)

|          |          |          |         |         |          |
|----------|----------|----------|---------|---------|----------|
| C (COM)  | MN (XRF) | SI (XRF) | P (XRF) | S (COM) | CR (XRF) |
| 0.17     | 0.65     | 0.48     | 0.019   | 0.001   | 15.9     |
| NI (XRF) |          |          |         |         |          |
| 1.58     |          |          |         |         |          |

TENSILE AS SHIPPED, KSI (MPA) 94.5 ( 652)  
-----

MATERIAL HAS BEEN MELTED AND MANUFACTURED IN THE USA WHICH IS A QUALIFYING COUNTRY TO DFARS REQUIREMENTS 252.225-7014 WITH ALTERNATE 1 FOR QUALIFYING COUNTRY 225.872.1, SUPERSEDED BY DFARS REQUIREMENTS DFARS 252.225-7008 AND 252.225-7009.

THIS ORDER WAS MANUFACTURED IN ACCORDANCE WITH CARPENTER SPECIALTY ALLOYS OPERATIONS QUALITY PROGRAM MANUAL, REVISION 30 DATED 09/28/11.

CARPENTER'S QUALITY MANAGEMENT SYSTEM WAS REGISTERED AS OF NOVEMBER 24, 2010 TO THE REQUIREMENTS OF ISO 9001:2008 APPROVAL CERTIFICATE 10-1385R BY PERFORMANCE REVIEW INSTITUTE. THIS CERTIFICATE OF TEST IS TYPE 3.1 PREPARED IN ACCORDANCE WITH EN 10204 (DIN 50049). WE HEREBY CERTIFY THAT THE ABOVE TEST DATA ARE IN ACCORDANCE WITH THE PURCHASE ORDER AND SPECIFICATION REQUIREMENTS, AS DOCUMENTED IN THIS CERTIFICATE OF TESTS.

TEST METHODS ARE PER THE ASTM STANDARDS ON FILE AND IN EFFECT AT TIME OF ORDER ACCEPTANCE, STANDARD PRACTICES, OR AS AGREED UPON BETWEEN CARPENTER & CUSTOMER.

GARY BROWN  
MANAGER - SPECIFICATIONS/CERTIFICATIONS  
CARPENTER TECHNOLOGY CORPORATION

*Gary Brown*

This certification is made to the customer printed on this form. Carpenter neither makes, nor assumes responsibility for, any representation or certification to other parties.  
Die vorliegende Zertifizierung ist nur für den in diesem Formular genannten Kunden gültig. Carpenter übernimmt gegenüber Dritten keinerlei Haftung für die ausgetragenen Daten oder Zertifizierungen.  
Ce certificat est uniquement valable pour le client dont le nom est imprimé sur ce formulaire. Carpenter n'assume pas de responsabilité pour une certification vis-à-vis d'une tierce personne.



# B/E Aerospace, Inc.

Page: 1 of 1

## CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172

### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO25711**

| LIN# | QUANTITY | U/M | PART-NUMBER  | CUST REF# | LOT-NUMBER | MANUFACTURER      | CCODE | CURE DATE | EXP DATE |
|------|----------|-----|--------------|-----------|------------|-------------------|-------|-----------|----------|
| 14   | 20       | EA  | MS21919WCH12 |           | 001348-5-1 | PACMET ONTARIO CA | 6UT23 | 08/09/13  | 08/30/28 |

  
Jason Lewis  
Vice President of Quality

09/11/14



A DIVISION OF PACIFIC METALS GROUP, LLC.

787 S. Wanamaker Ave - Ontario - CA 91761 - (909) 218-8889 - FAX (909) 218-8890 - e-mail: qc@pacificmetalsgroup.com

## Certification of Conformance

Customer: **B/E AEROSPACE**

Customer PO No: **1A1771**

Packing Slip No: **3006**

Part No: **MS21919WCH12**

Part Name: **CLAMP, SINGLE LOOP**

Revision: **E**

Job No: **001348-5-1**

Lot No: **001348-5-1**

Line Item: **5**

Qty. Shipped: **3,800**

We hereby certify that the above described article is conform in every aspect to the contractual and technical requirements of the purchase order, engineering drawing(s), specifications and standards referenced therein.

Where required by the customer purchase order, inclusive of all documents referenced therein, parts, materials and processes have been procured from Pacific Metals Group customers, their customers and/or government QPL approved sources, as applicable.

If the above described article is for an aircraft application,  
it is flight worthy and acceptable for its intended installation, use or operation per applicable FAR clauses.

### Applicable Specifications and/or Processes:

| Raw Material  | Finish  | Heat Treat       |                 |
|---|---|------------------|-----------------|
| <b>SS-304 ANN .032 X .500 X COIL</b><br><b>PER AMS-5059/5513J</b><br><b>(PO 100871 HEAT NO. J8C8)</b><br><b>CUSHION: WHITE SILICONE</b> | <b>PASSIVATE</b><br><b>PER AMS 2700</b><br><b>(PO 100916)</b> | <b>N/A</b>       |                 |
|   |   | CUSHION MFR DATE | EXP. DATE       |
|   |   | <b>8/9/2013</b>  | <b>15 YEARS</b> |

Certified By

**NORA ROJAS, Production Coordinator**

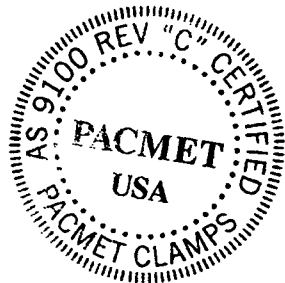
Name & Title

*Nora Rojas*

Signature

**3/22/2014**

Date



MS21919WCH12



**NORTH AMERICAN  
STAINLESS**

# METALLURGICAL TEST REPORT

6870 Highway 42 East  
Ghent, KY 41045-9615  
(502) 347-6000

Certificate: 873733 02  
Customer: 0018 001

Mail To:  
UNITED PERFORMANCE METALS  
3475 SYNGES ROAD  
HAMILTON, OH 45015

Ship To:  
UNITED PERFORMANCE METALS  
3475 SYNGES ROAD  
HAMILTON, OH 45015

Date: 9/25/2013 Page: 1

Steel: 302/304/304L

Finish: 2B

Corrosion: ASTM A262/10; 180Bend-OK

Your Order: 01023118

NAS Order: AN 0582355 01

## PRODUCT DESCRIPTION:

S/S COIL, C.R. ANNEALED & PICKLED; UNS 30400/30403/30200  
ASTM A240/13a, A480/13, A666/10; ASME SA240/11a, SA480/11a, SA666/11a  
CHEM ONLY ON FOLLOWING ASTM: A276/13, A479/13a, A484/13a, A312/13  
CHEM ONLY ON FOLLOWING ASME: SA312/11, SA479/11  
AMS 5511H/5513J/5516P XMRE; MIL-S-5059D AMD3 (X CRN MEAS); MIL-4043B  
NACE MR0175/ISO 15156-3; 2003 A, MR0103/07; Q95764D-A X MAG PERM  
MIN. SOLUTION ANNEAL TEMP 1900F, WATER QUENCHED

## REMARKS:

Mat'l is Free of Mercury Contamination. No weld repairs.  
EN 10204:2004 3.1; RoHS 1 & 2 Compliant  
Material is Free of Radioactive Contamination  
NAS Steel Making Process: EAF, AOD, & Cont. Casting  
Product Mfg. by a Quality Mgt. Sys. in Conf. w/ISO 9001  
\*Melted & Manufactured in the USA; Mat'l is DPA's Compliant

| Product ID | Supplier ID | Thickness | Width   | Weight | -----Length----- | Mark   | Pieces | COMMODITY CODE |
|------------|-------------|-----------|---------|--------|------------------|--------|--------|----------------|
| 03J8C6 A   | 03J8C6      | .0321     | 48.0000 | 28.505 | COIL             | 5426.2 | 11     | 1              |

## CHEMICAL ANALYSIS

| HEAT       | Supplier# | CM | C %   | CR %    | CU %  | MN %   | MO %  | N %   | NI %   | P %   | S %   |
|------------|-----------|----|-------|---------|-------|--------|-------|-------|--------|-------|-------|
| J8C6       | J8C6      | US | .0180 | 18.0120 | .5170 | 1.7560 | .3300 | .0718 | 8.0250 | .0310 | .0037 |
| Lab Check: |           |    | .0104 | 17.9940 | .4840 | 1.7530 | .3210 | .0778 | 8.0010 | .0310 | .0028 |
|            |           |    | SI %  |         |       |        |       |       |        |       |       |
|            |           |    | .2680 |         |       |        |       |       |        |       |       |
| Lab Check: |           |    | .2250 |         |       |        |       |       |        |       |       |

## MECHANICAL PROPERTIES

| Product Id | Supplier Id | UTS<br>KSI | .2% YS<br>KSI | ELONG<br>1-2" | Hard<br>RB | Tail<br>Hard | Grain<br>No. | D Per<br>F.W. |
|------------|-------------|------------|---------------|---------------|------------|--------------|--------------|---------------|
| 03J8C6 A   | 03J8C6      | F T 95.52  | 48.22         | 51.18         | 85.00      | 87.00        | 12.00        | 2.85          |

REVIEWED/APPROVED BY UPM QC

SPECS: AMS 5511H, 5513J, 5516P  
ASTM-A-240-13  
BY PJ DATE 9-30-13 TOTAL PAGES 1

NAS hereby certifies that the analysis on this certification is correct. Based upon the results and the accuracy of the test methods used, the material meets the specifications stated. These results relate only to the items tested and this report cannot be reproduced, except in its entirety, without the written approval of NAS.

Technical  
Dept. Mgr.

ERIC HESS

9/27/2013

UNITED PERFORMANCE METALS  
This is to certify that in accordance with the records in  
Part: SS-304-032-00500-COIL-A that our files the material shipped on your purchase order  
conforms to the following

Size: 500 X COIL  
P.O.: 100871  
Part: SS-304-032-00500-COIL-A  
Sales #: 02005484  
Quantity: 25

Description: 304 AIN .000-.024 #3 EDGE  
Customer: PACIFIC METALS GROUP  
Shipped: 07/21/14  
Heat: J8C6

Fernando Gonzalez

2-21-14  
Job # 001348-51



# ELECTRON PLATING III INC.

13932 Enterprise Drive  
Garden Grove, CA 92843  
Phone (714)554-2210 Fax (714)554-2530



## CERTIFICATION

SHIPPER NO. DATE  
420811A 3/21/14

### SOLD PACMET

TO 787 S. WANAMAKER AVE.  
ONTARIO, CA 91761

### SHIP PACMET

TO 787 S. WANAMAKER AVE.  
ONTARIO, CA 91761

| Customer | Purchase Order | Terms       | Incoming Shipper | Customer Job |
|----------|----------------|-------------|------------------|--------------|
| PACMET   | 100916         | 30 Days Net |                  |              |

| Quantity Ordered | Quantity Shipped | Quantity Backorder | UOM | Part Number  | Rev. | Description |
|------------------|------------------|--------------------|-----|--------------|------|-------------|
| 4,075            | 4,075            | 0                  | LOT | MS21919WCH12 | E    | CLAMP       |
| 1                | 1                | 0                  | LOT |              |      | EXPEDITE    |

Specifications: PASSIVATE METHOD 1 TYPE VI  
Per AMS 2700e

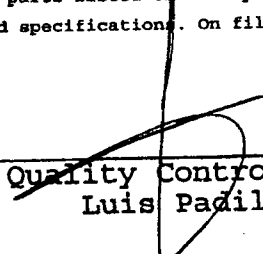
### EXPEDITE

Copper Sulfate #102 MIL-STD-753B  
Accept: 50

Reject: 0

We hereby certify that the parts listed on this purchase order and described hereon have been processed according to the referenced specifications. On file and available for examination.

Certified by

  
Quality Control Manager  
Luis Padilla Jr.

Received by

Shortages and discrepancies must be reported within 48 hours after parts are received. Rejected materials must be returned within 15 days. Not liable for more than three times our charge on any given job.

# Material Safety Data Sheet

Total page : 5

Version : 1.1

Revision Date : 2011/05/02

SH5060U Silicone rubber

## Section 1 - Product and company identification

### MANUFACTURER'S NAME

PACMET CLAMPS

787 S. Wanamaker Avenue, Ontario, CA  
91761, USA

TEL. NUMBER: (909) 218-8889

FAX. NUMBER: (909) 218-8890

### PRODUCT CLASS

Silicone compound

### TRADE NAME & PRODUCT CODE

SH5060U

## Section 2 - Composition of Ingredients

| INGREDIENT  | SOBRIQUET                | CAS NO.    | PERCENT<br>BY WEIGHT |
|---|--------------------------|------------|----------------------|
| Dimethyl, methyl vinyl siloxane,<br>dimethyl vinyl terminated | Polyalkylalkenylsiloxane | 68083-18-1 | 60-70                |
| Silicon Dioxide   | Silica                   | 7631-86-9  | 20-30                |
| Others  |                          |            | 1-10                 |

## Section 3 - Hazards Identification

### Routes of exposure

Exposure may be by inhalation, skin, eye contact. To minimize exposure, ventilation and personal protective equipment is recommended. Avoid breathing vapor or mist.

Avoid contact with eyes, skin, and clothing.

### Short term & Long term effects

- Short term effects -

No data

- Long term effects -

No data

## Section 4 - First Aid Measures

### After inhalation

Remove from exposure area to fresh air immediately. Perform artificial respiration if necessary. Keep person warm and at rest. Get medical attention immediately.

### After contact with the eyes

Wash eyes immediately with large amounts of water occasionally lifting upper and lower lids, until no evidence of chemical remains (at least 15-20 minutes).

Get medical attention immediately.

## Material Safety Data Sheet

Total page : 6

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### SH5060U Silicone rubber

#### After contact with the skin

Remove contaminated clothing and shoes immediately. Launder before re-use.  
Wash affected area thoroughly with soap and water until no evidence of chemical remains(at least 15~20 minutes). Get medical attention immediately.

#### After swallow

Extreme care must be used to prevent aspiration. Do not induce vomiting.  
Slowly dilute with 1-2 glasses of water or milk. Get medical attention immediately.

#### Others

This product contains Methylpolysiloxanes which can generate Formaldehyde at approximately 300°F and above, in atmospheres which contain oxygen. Formaldehyde is a skin and respiratory sensitizer, eye and throat irritant, acute toxicant, and potential cancer hazard.

### Section 5 - Fire Fighting Measures

#### Extinguishing media

Regular foam, Carbon Dioxide, Dry Chemical

#### Special fire fighting procedures

Move container from fire area if you can do it without risk. Avoid breathing toxic vapors. Keep upwind. Full protective equipment including self-contained breathing apparatus should be used.

Water spray may be ineffective. If water is used, fog nozzles are preferable.

Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

#### Unusual fire and explosion hazards

Closed containers may explode(due to the build-up of pressure) when exposed to extreme heat.

### Section 6 - Accidental release measures

#### STEPS TO BE TAKEN IN CASE MATERIALS IS RELEASED OR SPILLED

Not applied due to solid.

### Section 7 - Handling and Storage

#### Handling

Wear eye protection device and protective glove when handling this product.  
May cause a curing difficulty with amine, sulfur, organophosphate compound, and organometallic compound.

#### Storage

Store in a cool and dry place. Avoid direct sunlight.  
Store container in a well ventilated place.



The Best Fine  
Chemical Company

## Material Safety Data Sheet

Total page : 5

Version : 1.1

Revision Date : 2011/05/02

SH5000U Silicone rubber

### Section 8 - Exposure controls and personal protection

#### EXPOSURE LIMITS

Maximum airborne concentrations at the workplace:

not applicable

#### EXPOSURE IN THE WORK PLACE LIMITED AND CONTROLLED

#### GENERAL PROTECTION AND HYGIENE MEASURES

Observe standard industrial hygiene practices for the handling of chemical substances. Do not eat or drink when handling.

#### PERSONAL PROTECTION EQUIPMENT RESPIRATORY PROTECTION

Not necessary under usual conditions. If aerosols occur during use, the following breathing protection is recommended: fine dust mask P2.

#### HAND PROTECTION

Recommendation: Protective gloves made of butyl rubber, nitrile rubber protective gloves.

#### EYE PROTECTION

Recommendation: tight fitting protective goggles.

#### EXPOSURE TO THE ENVIRONMENT LIMITED AND CONTROLLED

Prevent material from entering surface waters and soil.

#### FURTHER INFORMATION FOR SYSTEM DESIGN AND ENGINEERING MEASURES

Observe information in section 7. In case of aerosol formation special protective measures are required (exhausting by suction, respiratory protection). If the product is used with a catalyst and crosslinker, the following measures are recommended: Vapours/aerosols should be exhausted directly at place of formation.

### Section 9 - Physical and Chemical Properties

APPEARANCE : Transparent

ODOR : Oderless

SPECIFIC GRAVITY (H<sub>2</sub>O=1) : 1.15~1.19

BOILING POINT(°F) : Not applicable

FLASH POINT : Not applicable

EVAPORATION RATE(VS.n-BuAc) : Negligible

PH VALUE : None known

SOLUBILITY IN WATER : Insoluble

VAPOR DENSITY(VS.AIR) : Negligible

LOW EXPLOSIVE LIMIT(LEL) : No data

UPPER EXPLOSIVE LIMIT(UEL) : No data

AUTOIGNITION TEMPERATURE : No data

## Material Safety Data Sheet

Total page : 5

Version : 1.1

Revision Date : 2011/05/02

SH5060U Silicone rubber

### Section 10 - Stability and Reactivity

Stability : stable under normal conditions of use.

Conditions to avoid : None.

Materials to avoid : No data

Hazardous decomposition products : No data

Hazardous polymerization : Will not occur under normal conditions.

### Section 11 - Toxicological Information

Effects of exposure : Not applied

Acute toxicity data : No data

#### ACUTE TOXICITY DATA :

|                      | LD50(mg/kg, Oral-rat) | LC50(mgm/4h, Inh-rat) |
|----------------------|-----------------------|-----------------------|
| Polydimethylsiloxane | Unknown               | Unknown               |
| Fumed silica         | Unknown               | Unknown               |
| Others               | Unknown               | Unknown               |

### Section 12 - Environmental Information

#### AIR

This product is a high molecular weight liquid polymer which has a very low vapour pressure (<1 mm Hg). As a result it is unlikely to become an atmospheric contaminant unless generated as an aerosol.

#### WATER

This product has a very low water solubility (< 100 ppb). As it has a specific gravity of < 1, if discharged to water, it will initially form a surface film. As the product is non volatile and has a high binding affinity for particulate matter, it will adsorb to particulates and sediment out.

#### SOIL

If discharged to surface water, this product will bind to sediment. If discharged in effluent to a waste water treatment plant, the product is removed from the aqueous phase by binding to sewage sludge. If the sewage sludge is subsequently spread on soil, the silicone product is expected to degrade.

#### DEGRADATION

No specific information is available on this product, but analogy with polydimethylsiloxane suggests that it will degrade in the soil, initially via an abiotic mechanism to form smaller molecules. These in turn are either biodegraded in soil or volatilized into the air where they are broken down in the presence of sunlight. Due to the very low water solubility of this product, standard OECD protocols for ready and inherent biodegradability are not suitable for measuring the biodegradability of this product.

#### ENVIRONMENTAL EFFECTS

##### TOXICITY TO WATER ORGANISMS

Based on analogy to similar materials this product is expected to exhibit low toxicity to aquatic organisms.

Discharge, treatment, or disposal may be subject to national, state, or local laws.

# Material Safety Data Sheet

Total page : 5

Version : 1.1

Revision Date : 2011/05/02

SH5060U Silicone rubber

## Section 13 - Disposal Considerations

Discharge, treatment, or disposal may be subject to national, state, or local laws.

## Section 14 - Transport Information

US Department of Transportation(DOT)

Shipping name : not applicable

Hazard class : Not DOT regulated

ID number : None

Packing group : None

Labels : not applicable

## Section 15 - Regulatory Information

The law for occupational safety and health in Korea: section 39, 41

The law for hazardous chemical substances in Korea

Other International Regulations

Chemical Inventories

MITI : All components are listed on ENCS or its exempt rule.

KECL : All ingredients listed, exempt or notified.

IECSC : All ingredients listed or exempt.

EINECS : All ingredients listed or exempt.

TSCA : Not determined.

DSL : Not determined.

AICS : Not determined.

PICCS : Not determined.

## Section 16 - Other Information

The data given here is based on our current knowledge and experience. The purpose of this safety data to describe the products in terms of their safety requirements.

The data does not signify any warranty with regard to the products' properties.

## **5. HOW TO USE**

For blending or coloring, milling with two-roll mill is the most suitable process. Milling time should be carefully decided to secure uniformity of materials.

## **6. HANDLING PRECAUTIONS**

Wear eye protection and protective gloves when handling this product.

## **7. SAFETY AND STORAGE**

Use it within 12 months from the date of manufacture.

Store in a cool dry area and place out of direct sunlight.

Keep out of reach of children.

## **8. PACKAGING**

20 kg box, 480 kg box

## **9. WARRANTY INFORMATION – please read carefully**

The information contained herein is offered in good faith and is believed to be accurate. However, because condition and methods of use of our products are beyond our control, this information should not be used in substitution for customer's test to ensure that Pacmet's products are safe, effective, and fully satisfactory for the intended use.

Pacmet's sole warranty is that the product will meet the Pacmet sales specifications in effect at the time of shipment. Your exclusive remedy for breach of such warranty is limited to replacement of any product shown to be other than as warranted.

Pacmet's specifically disclaims any other express or implied warranty of fitness for a particular purpose or merchantability. Unless Pacmet provides you with a specific, duly signed endorsement of fitness for use, Pacmet disclaims liability for any incidental or consequential damages.

Suggestion of use shall not be taken as inducements to infringe any patent.

## **10. THE DATE OF ISSUE**

The first date of issue: 2009.03.01

The revised date of issue: 2011.05.01 (2<sup>nd</sup>)



A DIVISION OF PACIFIC METALS GROUP, LLC.

No 1, Jalan Indah Gemilang 5, Taman Perindustrian Gemilang, 81800 Ulu Tiram, Johor

## MATERIAL TEST DATASHEET

|                 |             |  |                     |           |
|-----------------|-------------|--|---------------------|-----------|
| <b>Compound</b> | SILICONE 60 |  | <b>Date of Test</b> | 1.10.2012 |
|-----------------|-------------|--|---------------------|-----------|

| Original Property   | In-house /<br>External<br>Lab | Units                | Test Result                           |                       |
|---------------------|-------------------------------|----------------------|---------------------------------------|-----------------------|
|                     |                               |                      | Customer                              | CRP                   |
|                     |                               |                      | AMS3303                               | SH5060U               |
| Colour              | In-house                      |                      |                                       | WHITE                 |
| Specific gravity    | In-house                      | g/cm <sup>3</sup>    |                                       | 1.17<br>ASTM D1417-01 |
| Hardness            | In-house                      | Degree Shore A       | 60 ± 5<br>ASTM D2240                  | 60<br>DIN 53 505      |
| Tensile Strength    | In-house                      | N/mm <sup>2</sup>    | > 4.48<br>ASTM D412                   | 7.15<br>ASTM D412     |
| Elongation at Break | In-house                      | %                    | > 150<br>ASTM D412                    | 380<br>ASTM D412      |
| Tear Resistance     | In-house                      | kN/m                 | > 6.13<br>ASTM D624, D4 B             | 25                    |
| Compression Set     | In-house                      | %<br>Test condition: | < 25<br>ASTM D395-B<br>70 hrs @ 150°C |                       |

| CHANGE IN PROPERTIES | In-house /<br>External<br>Lab | Units   | Test Result           |         |
|----------------------|-------------------------------|---------|-----------------------|---------|
|                      |                               |         | Customer              | CRP     |
|                      |                               |         | Specification         | SH5060U |
| Test Condition :     |                               |         | 70 Hrs @ 225°C in Air |         |
| Hardness (Shore A)   | In-house                      | Shore A | +/- 10                |         |
| Tensile Strength     | In-house                      | %       | < -20%                |         |
| Elongation at Break  | In-house                      | %       | < -40%                |         |

|                    |        |
|--------------------|--------|
| <b>Prepared By</b> | SC Ooi |
|--------------------|--------|

|                    |        |
|--------------------|--------|
| <b>Approved By</b> | CH Lim |
|--------------------|--------|





A DIVISION OF PACIFIC METALS GROUP, LLC.

787 S. Wanamaker Avenue, Ontario, CA 91761 Tel: (909) 218-8889 Fax: (909) 218-8890  
No 1, Jalan Indah Gemilang 5, Taman Perindustrian Gemilang, 81800 Ulu Tiram, Johor.

## SH5060U

### GENERAL PURPOSE SILICONE ELASTOMER

|             |   |
|-------------|---|
| FEATURES    | -GENERAL PURPOSE SILICONE RUBBER  |
| BENEFITS    | -EXCELLENT PROCESS ABILITY<br>-EXCELLENT MOLD RELEASING ABILITY<br>-EXCELLENT MECHANICAL PROPERTIES |
| COMPOSITION | -SILICONE POLYMER<br>-SILICA  |

#### 1. PRODUCT DESCRIPTION

SH5060U is general purpose type heat cured compounds for compression molding.

#### 2. APPLICATIONS

O-ring, Gasket, Sheets, Key Pad

#### 3. KEY PERFORMANCE PROPERTIES

Excellent process ability

Well balanced physical properties

Low yellowness

60 durometer grade available

#### 4. TYPICAL PROPERTIES

| PROPERTIES                          | TEST METHOD                | UNIT    | SH5060U            |                   |
|-------------------------------------|----------------------------|---------|--------------------|-------------------|
| APPEARANCE                          | ASTM E1767                 | -       | TRANSLUCENT        |                   |
| WILLIAMS PLASTICITY                 | ASTM D926                  | -       | 210                |                   |
| CURING CONDITION                    | CURING AGENT               | -       | <sup>1)</sup> KC-8 | <sup>2)</sup> DCP |
|                                     | AMOUNTS                    | Phr     | 0.5                | 1                 |
|                                     | PRESS 1 <sup>ST</sup> CURE | -       | 10 min, 170°C      | 10 min, 170°C     |
|                                     | OVEN 2 <sup>ND</sup> CURE  | -       | 4 hrs, 200°C       | 4 hrs, 200°C      |
| SPECIFIC GRAVITY                    | ASTM D792                  | -       | 1.18               | 1.18              |
| HARDESS                             | ASTM D2240                 | Shore A | 60                 | 60                |
| TENSILE STRENGTH                    | ASTM D412                  | MPa     | 8.5                | 8.8               |
| ELONGATION                          | ASTM D412                  | %       | 400                | 416               |
| TEAR STRENGTH                       | ASTM D624 C                | N/mm    | 27                 | 29                |
| LINEAR SHRINKAGE                    | JIS K6249                  | %       | 4.2                | 4.4               |
| COMPRESSION SET<br>(22HRS at 175°C) | ASTM D395                  | %       | 17                 | 14                |



# B/E Aerospace, Inc.

Page: 1 of 1

## CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172

### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO25711**

| LINE# | QUANTITY | U/M | PART-NUMBER | CUST REF# | LOT-NUMBER | MANUFACTURER | CCODE | MFR   | DATE | EXP DATE |
|-------|----------|-----|-------------|-----------|------------|--------------|-------|-------|------|----------|
| 6     | 20       | EA  | MS17984C413 |           | 1428845    | AVIBANK MFG. |       | 84256 |      |          |

  
Jason Lewis  
Vice President of Quality

09/11/14

\*\* DEARS \*\* \*\* CERT Q13-P \*\*



**AV BANK**  
MFG. INC.

AEROSTRUCTURES DIVISION, A PCC COMPANY

11500 SHERMAN WAY • NORTH HOLLYWOOD, CA 91605

PHONE: (818) 392-2100 • FAX: (818) 255-2094

No ozone depleting substances used in processes.



**CERTIFICATE OF CONFORMANCE**

SHIPPER

DATE SHIPPED

06/09/14

| PAGE | OF | DATE ENTERED | SALES ORDER NO. |
|------|----|--------------|-----------------|
| 1    | 2  | 02/07/14     | 690479-8074     |

B 103866  
I B/E AEROSPACE, INC. (MIAMI)  
L 10000 N.W. 15TH TERRACE  
L

T MIAMI, FL  
O USA

33172

S B/E AEROSPACE CONSUMABLE MGMNT  
H 9835 NW 14TH ST  
I  
P

T MIAMI, FL  
O USA

33172

|                    |   |             |   |                 |   |   |  |                    |  |                 |  |                 |  |               |  |
|--------------------|---|-------------|---|-----------------|---|---|--|--------------------|--|-----------------|--|-----------------|--|---------------|--|
| CUSTOMER ORDER NO. |   |             |   | CONTRACT NUMBER |   |   |  | RATING             |  | ORDERED BY      |  | REC'D BY        |  | TERRITORY NO. |  |
| OWEH24             |   |             |   |                 |   |   |  |                    |  | ROHAN           |  | GLE             |  | 124           |  |
| 0                  | 1 | 1           | 3 | N               | N | R   |  | TYPE OF INSPECTION |  | TERMS           |  | FREIGHT         |  |               |  |
|                    |   |             |   |                 |   |   |  |                    |  | 1/2% 10% NET 30 |  | NOHO/COLLECT    |  |               |  |
| SHIPPED VIA        |   |             |   |                 |   |   |  |                    |  |                 |  |                 |  |               |  |
| FEDEX GROUND       |   |             |   |                 |   |   |  |                    |  |                 |  |                 |  |               |  |
| ITEM NO.           |   | NO. SHIPPED |   | UNITS           |   | PART NUMBER / DESCRIPTION   |  |                    |  |                 |  | NO. BACKORDERED |  |               |  |
| 1                  |   |             |   | E               |   | FEDEX ACCT# 0331-0149-0<br>QAP 33.0 CLAUSES A,A.1,B,C,E,H,P.U.V APPLY<br>*** 3 LOT MAX ***<br>947 E BLC4BA13S<br>MS17984C413<br>SHIP#: 1 QTY : 2 LOT:1368427 DUE :<br>AREA :C6 AISLE :2 SEC:1 SHELF<br>SHIP#: 1 QTY : 731 LOT:1427042 DUE :<br>AREA :NS AISLE :E SEC:19 SHELF<br>SHIP#: 1 QTY : 177 LOT:1428845 DUE :<br>AREA :NS AISLE :E SEC:19 SHELF<br>SHIP#: 1 QTY : 37 LOT:1438753 DUE :<br>AREA : AISLE : SEC: SHELF |  |                    |  |                 |  | 53              |  |               |  |
| 1.1                |   | 1           |   | L               |   | 270-CERT<br>Q13-P CHEM & PHY CERTS<br>1<br>SHIP#: 1 QTY : 1 LOT:<br>AREA : AISLE : SEC:   |  |                    |  |                 |  | 0               |  |               |  |
| PULLED BY          |   | SHIPPED BY  |   | SHIP VIA        |   | DATE SHIPPED  |  | WAYBILL/OTHER INFO |  |                 |  | NO. OF PKGS     |  | WEIGHT        |  |
|                    |   |             |   |                 |   |   |  |                    |  |                 |  |                 |  |               |  |

We hereby certify that all materials used in the manufacture of parts covered by this report conform to the material specifications called for by the above purchase order. We further certify that the parts are manufactured in accordance with applicable drawings or specifications current on the date on which the order was placed. Test reports covering materials in these parts, and indicating conformance with applicable specifications, are on file and subject to examination. No ozone depleting substances were used in processes. Parts are mercury free of contamination.

WI-14-AMS-004 REV:NC

AVIBANK MFG., INC.

BY: AUTHORIZED QUALITY CONTROL REPRESENTATIVE

\*\* DEARS \*\* \*\* CERT Q13-P \*\*



**AVIBANK**  
MFG. INC.

AEROSTRUCTURES DIVISION, A PCC COMPANY

11500 SHERMAN WAY • NORTH HOLLYWOOD, CA 91605

PHONE: (818) 392-2100 • FAX: (818) 255-2094

No ozone depleting substances used in processes.

**CERTIFICATE OF CONFORMANCE**

SHIPPER

DATE SHIPPED

06/09/14

| PAGE | OF | DATE ENTERED | SALES ORDER NO. |
|------|----|--------------|-----------------|
| 2    | 2  | 02/07/14     | 690479-8074     |

B 103866  
I B/E AEROSPACE, INC. (MIAMI)  
L 10000 N.W. 15TH TERRACE  
L

T MIAMI, FL  
O USA

33172

S B/E AEROSPACE CONSUMABLE MGMNT  
H 9835 NW 14TH ST  
I  
P

T MIAMI, FL  
O USA

33172

| CUSTOMER ORDER NO.<br>OWEH24 |                   |            |   | CONTRACT NUMBER   |   |              |  | RATING             |  | ORDERED BY<br>ROHAN     |  | REC'D BY<br>GLE         |  | TERRITORY NO.<br>124 |  |
|------------------------------|-------------------|------------|---|---|---|--------------|--|--------------------|--|-------------------------|--|-------------------------|--|----------------------|--|
| 0                            | 1                 | 1          | 3 | N   | N | R            |  | TYPE OF INSPECTION |  | TERMS<br>1/2% 10 NET 30 |  | FREIGHT<br>NOHO/COLLECT |  |                      |  |
| SHIPPED VIA<br>FEDEX GROUND  |                   |            |   |   |   |              |  |                    |  |                         |  |                         |  |                      |  |
| ITEM NO.                     | NO. SHIPPED UNITS |            |   | PART NUMBER / DESCRIPTION   |   |              |  |                    |  | NO. BACKORDERED         |  |                         |  |                      |  |
|                              |                   |            |   | <p>TO OUR VALUED CUSTOMERS<br/>A RETURN MATERIAL AUTHORIZATION (RMA) NUMBER IS REQUIRED FOR ALL PRODUCTS RETURNED TO AVIBANK TO REQUEST A RMA NUMBER CONTACT YOUR AVIBANK SALES ASSOCIATE AT 818/392-2100</p> <p>THESE COMMODITIES WERE EXPORTED FROM AVIBANK MFG., INC. IN ACCORDANCE WITH EXPORT ADMINISTRATION REGULATIONS OR INTERNATIONAL TRAFFIC IN ARMS REGULATIONS. DIVERSION CONTRARY TO U.S. LAW IS PROHIBITED.<br/>COMPLIANT WITH DFARS 252.225.7014 ALT 1</p> |   |              |  |                    |  |                         |  |                         |  |                      |  |
| PULLED BY                    |                   | SHIPPED BY |   | SHIP VIA  |   | DATE SHIPPED |  | WAYBILL/OTHER INFO |  | NO. OF PKGS.            |  | WEIGHT                  |  |                      |  |
|                              |                   |            |   |   |   | 6/9/14       |  |                    |  | 1                       |  |                         |  |                      |  |

We hereby certify that all materials used in the manufacture of parts covered by this report conform to the material specifications called for by the above purchase order. We further certify that the parts are manufactured in accordance with applicable drawings or specifications current on the date on which the order was placed. Test reports covering materials in these parts, and indicating conformance with applicable specifications, are on file and subject to examination. No ozone depleting substances were used in processes. Parts are mercury free of contamination.

WI-14-AMS-004 REV:NC

AVIBANK MFG., INC.

BY: AUTHORIZED QUALITY CONTROL REPRESENTATIVE



**AV BANK**  
MFG. INC.  
AEROSTRUCTURES DIVISION, A PCC COMPANY  
11500 SHERMAN WAY • NORTH HOLLYWOOD, CA 91605  
PHONE: (818) 392-2100 • FAX: (818) 255-2094

## CERTIFIED TEST REPORT

1 of 1

**CUSTOMER:** B/E AEROSPACE, INC. (MIAMI)

**SHOP ORDER NO./WORK ORDER NO.:** 1428845

**CUSTOMER P/N:** MS17984C413

**CUSTOMER P.O.:** 0WEH24

**QTY. SHIPPED:** 177

**AVIBANK P/N:** BLC4BA13S RV. N

**PART NAME:** S/A STANDARD

**PROCUREMENT SPEC:** NAS1332

**BODY WO.:** 1435320

**QTY. MFG'D:** 177

| PROCESS    | PROCESSOR                              | TYPE/CLASS | SPECIFICATION  |
|------------|--|------------|----------------|
| ANODIZE    | K & L ANODIZING CORP. BURBANK, CA.     | II/2       | MIL-A-8625 'F' |
| HEAT TREAT | AVIBANK MFG., INC., NO. HOLLYWOOD, CA. | CH900      | AMS2759 'E'    |
| HEAT TREAT | AVIBANK MFG., INC., NO. HOLLYWOOD, CA. | HRC 40 MIN | AMS2759 'E'    |
| PASSIVATE  | AVIBANK MFG., INC., NO. HOLLYWOOD, CA. | 2          | AMS2700 'E'    |

| NO.   | * BOLT TENSILE (LBS.) | TORQUE (IN-LBS.) | * RETAINING DEVICE TENSILE (LBS.) | ** SHEAR (LBS.) |
|-------|-----------------------|------------------|-----------------------------------|-----------------|
| 1.    | N/A                   | N/A              | 235 NF                            | 9,813           |
| 2.    | N/A                   | N/A              | 235 NF                            | 9,719           |
| 3.    | N/A                   | N/A              | 236 NF                            | 9,793           |
| 4.    |                       |                  |                                   |                 |
| 5.    |                       |                  |                                   |                 |
| REQT. | N/A MIN.              | N/A MIN.         | 230 MIN.                          | 9,200 MIN.      |

\* BF = BALL HOLE FAILED. \* TF = THREADS FAILED. \* NF = NO FAILURE. \*\* (S) = SINGLE SHEAR. \*\* (D) = DOUBLE SHEAR.

**OTHERS:** THESE PARTS WERE LAB TESTED PER 'NAS' RQMTS AND FOUND ACCEPTABLE.  
SALES ORDER NO. 690479-8074.

AVIBANK MFG., INC. CERTIFIES THAT THE PARTS LISTED ABOVE WERE MANUFACTURED IN COMPLIANCE WITH YOUR PURCHASE ORDER. ALL TEST AND INSPECTION REPORTS ARE ON FILE AT AVIBANK FOR VERIFICATION.

**AUTHORIZED SIGNATURE:**

*Norma Castanaza*  
NORMA CASTANAZA Q.C. CLERK

WI-03-CTR-005 rev NC



**DATE:** 06/09/14

Job # 2930



FAST LANE PRECISION

## Certificate of Conformance

Customer: Avibank MFG

Part Number: 16-4C

Rev: AC

Description: Shoulder Ring

Heat #: H1A1

Order Quantity: 20000

Material #: C1769

Customer Purchase Order: 753872

Remarks

Parts were manufactured from documented work instructions, using approved suppliers and processors. All components have been inspected and approved with inspection and certification on file at our facility.

  
CERT REVIEW

Quality Assurance Representative

1 Apr 14  
Date



APR 11 2014

MAIN LOT #

1428845 1438753

COMPONENT LOT #

K030699

NAME

SHOULDER RING

CLERK: GV — NC 2 DS —



# **METALLURGICAL TEST REPORT**

6870 Highway 42 East  
Ghent, KY 41045-9615  
(502) 347-6000

SNA13145

C1769

Certificate: 833261 02    Mail To:    Ship To:    Date: 5/06/2013    Page: 1 of 4  
 CUSTOMER: 0370 002    SUMMIT STAINLESS STEEL, LLC.    SUMMIT STAINLESS STEEL, LLC.    Steel: 303  
 HAS Order: LP    604    5    2801 ELIZABETH STREET    8848 U.S. 90 A    Finish: Cold Draw  
 Your Order: NAS2492    NORTH BRIDGEMAN NJ 08902    SUGARLAND TX 77478    Dia/Thk: .4063 in  
 Item Code:    Leg Length:    Length: 144.00 in  
 Corrosion:

## **PRODUCT DESCRIPTION:**

Round Bar, Annealed, Cold Draw  
 ASTM A582/12 EN 10204 3.1, ASTM A484/11  
 AMS 5640U TYPE 1, QQS-764B CONDITION A  
 SOLUTION ANNEAL TEMP 1900F MIN

## **REMARKS:**

COMPLIES W/REQUIREMENTS OF DPM 252.225-7014A-1 KU DIRECTIVE  
 2011/65/EU. RoHS. EAF+30D+CC. NO WELD REPAIR. MELTED AND MFG  
 IN USA FREE FROM MERCURY AND LOW MELTING ALLOY CONTAMINATION

| Bundle Weight | Bundle Weight | Bundle Weight | Bundle Weight | Bundle Weight | Bundle Weight | Bundle Weight | Bundle Weight | Bundle Weight |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| BF39576       | 2300          |               |               |               |               |               |               |               |

| CHEMICAL ANALYSIS |            |    |      |      |       |      |      |      |      |      |      | Chemical Analysis per ASTM A751/08 |
|-------------------|------------|----|------|------|-------|------|------|------|------|------|------|------------------------------------|
| Heat              | Supplier # | CM | C %  | CO % | CR %  | CU % | MN % | MO % | N %  | NI % | P %  | S %                                |
| H1A1              |            | US | .054 | .17  | 17.31 | .25  | 1.80 | .26  | .045 | 8.47 | .035 | .3300                              |
|                   |            |    | SI % |      |       |      |      |      |      |      |      |                                    |
|                   |            |    | .51  |      |       |      |      |      |      |      |      |                                    |

## **MECHANICAL PROPERTIES**

| MECHANICAL PROPERTIES |           |            |            |         |              |       |
|-----------------------|-----------|------------|------------|---------|--------------|-------|
| 1 d<br>o i<br>R L     | RE<br>No. | 2YS<br>KSI | UTS<br>KSI | RA<br>% | King<br>% 2" |       |
| BF39576               | R L       | 213.0      | 81.41      | 105.43  | 34.57        | 32.08 |

NAS hereby certifies that the analysis on this certification is correct. Based upon the results and the accuracy of the test methods used, the material meets the specifications stated. These results relate only to the items tested and this report cannot be reproduced, except in its entirety, without the written approval of NAS

Technical  
Dept. Mgr.

ERIC HESS

M.D. 12/26/13

INDUSTRIAL  
STEEL & WIRE

**SW**

Your preferred source of wire and strip

1901 N. Narragansett Ave. • Chicago, Illinois 60639

773/804.0404 • Fax 773/804.0408

www.industeel.com

An ISO 9001 Certified Company

11/05/13

ISW Order/Invoice Number: 171013-00

SOLD TO: A9990  
AVIBANK MFG. CO.

SHIP TO: A9991  
AVIBANK MFG. CO.  
11500 SHERMAN WAY

P.O. BOX 9909  
NO HOLLYWOOD CA 91609

NO. HOLLYWOOD, CA 91605

CUSTOMER PO: 751295

085017BT

.0850"17-7 PH STAINLESS COND C CNT CLS

WEIGHT: 500

HEAT NUMBER: E121590

**CHEMISTRIES**

|        |        |        |        |        |          |         |        |
|--------|--------|--------|--------|--------|----------|---------|--------|
| C      | Mn     | P      | S      | Si     | Cr       | Ni      | Al     |
| .082 ✓ | .880 ✓ | .029 ✓ | .001 ✓ | .269 ✓ | 16.630 ✓ | 7.560 ✓ | .926 ✓ |
| Mo     | Cu     |        |        |        |          |         |        |
| .310 ✓ | .255 ✓ |        |        |        |          |         |        |

**CERT REVIEW**

MAIN LOT #  
1428845, 1438753  
COMPONENT LOT #  
1403259

**PHYSICAL PROPERTIES**

TENSILE: 253000C 307000CH

TORSIONS: OK

ROCKWELL #1:

BENDS: OK

ROCKWELL #2:

SALT SPRAY HOURS: CLERK: GV NC DS

YIELD STRENGTH: 000000C/000000CH

COATING WEIGHT:

ELONGATION:

GRAIN SIZE:

REDUCTION OF AREA:

\*\*\*\* MERCURY FREE \*\*\*\*

\*\*\* SPECIFICATIONS \*\*\*

ASTM A313-10

AMS 5678-F ✓

TARIFF: 7223.00

NAFTA: B

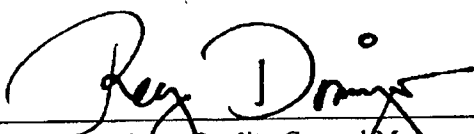
MELT: GB UNITED KINGDOM ✓

ORIG: GB UNITED KINGDOM ✓

MILL: INDUSTRIAL ALLOYS

DFAR: Y

ROHS: Y

  
Rey Domingo, Quality Control Manager



1389733

NOV 8 '13

The values and specifications herein are passed through from the manufacturer directly to the customer.  
Please see reverse side or www.industeel.com for all Terms and Conditions of Sale.  
Material Properties Sheet 70403-MPS Version 1 Approved by BF 11/20/12



## CERT REVIEW

MAIN LOT #

1428845 1438753

COMPONENT LOT #

14380636

NAME

BUTON HANALE  
CLERK: GY A NCAS DS

## Certified Inspection Report

11/08/13  
10:26:41Alcoa Inc.  
Massena Operations  
Park Avenue East, Massena, NY 13662

|   |                                       |   |   |                    |
|---|---------------------------------------|---|---|--------------------|
| Customer<br><b>Bralco Metals</b>  | Customer P.O. No.<br><b>43-114050</b> | Customer Part No.   | Alcoa Order No.<br><b>MMC-A9447- -001</b> | Govt. Contract No. |
| Ship To <b>Bralco Metals</b><br><b>15090 Northam St</b><br><b>La Mirada, CA 90638</b> |                                       | We hereby certify that the material covered in this report has been inspected in accordance with, and has been found to meet the applicable requirements described herein, including any specifications forming a part of the description, or as previously agreed to with customer and that samples representative of the material met the composition limits and have the mechanical properties shown on the face of this sheet. Manufactured under an ISO/TS 16949 registered quality management system. Melted and manufactured in the USA. |   |                    |
|   |                                       | James E. Samuel II, Quality Assurance Manager   |   |                    |

|                |           |                |            |         |                           |        |           |
|----------------|-----------|----------------|------------|---------|---------------------------|--------|-----------|
| Date Shipped   | 11/08/13  | Weight Shipped | 2.147 lbs  | Product | CFRB-SMS-ROD DIA. X 12 FT | BOL    | 000161556 |
| Alloy - Temper | 2024-T351 | Size           | 0.81250 IN | Shape   | DIA                       | Config | 12 FT     |
|                |           |                |            | QRR     |                           |        |           |

## Specifications:

AMS 4120R (Except Marking)  
AMS-QQA-225/6A  
Material conforms to T4 requirements  
QQA-225/6E (1)  
ASTM B211-12E1

Product produced and marked to the requirements of AMS-QQ-A-225/6 also meets the requirements of QQ-A-225/6.  
Product produced and marked to the requirements of QQ-A-225/6 also meets the requirements of AMS-QQ-A-225/6.

THIS METAL HAS NOT BEEN  
EXPOSED TO MERCURY OR MERCURY  
CONTAINING COMPOUNDS WHICH  
DISSEMINATION OF DATA

| TEST REQUIREMENTS |  | Test   | Test   | Test   | Test | Test | Test | Test | Test | Test | Test |
|-------------------|--|--------|--------|--------|------|------|------|------|------|------|------|
|                   |  | U.T.S. | T.Y.S. | %Elong |      |      |      |      |      |      |      |
| Max:              |  |        |        |        |      |      |      |      |      |      |      |
| Min:              |  | 62.0   | 45.0   | 10.0   |      |      |      |      |      |      |      |
| Test Results      |  | Test   | Test   | Test   | Test | Test | Test | Test | Test | Test | Test |
| Lot / Work Order  |  | U.T.S. | T.Y.S. | %Elong |      |      |      |      |      |      |      |
| MA20132517        |  |        |        |        |      |      |      |      |      |      |      |
| Max:              |  | 69.6   | 52.9   | 21.5   |      |      |      |      |      |      |      |
| Min:              |  | 68.5   | 52.3   | 19.0   |      |      |      |      |      |      |      |

When 2 or more tests per lot are made, the highest and lowest values are reported.  
Analysis obtained from one or more samples in this lot.

## TEST ABBREVIATIONS

U.T.S. Ultimate Tensile Strength KSI

T.Y.S. Tensile Yield Strength KSI

%Elong Elongation % in 2"

Aluminum Association Chemical Composition Limits (in Weight %)

| ALLOY |     | %SI  | %FE  | %CU | %MN  | %MG | %CR  | %ZN  | %TI  | %Others | %Others | %AL |  |  |  |
|-------|-----|------|------|-----|------|-----|------|------|------|---------|---------|-----|--|--|--|
| 2024  | MAX | 0.50 | 0.50 | 4.9 | 0.9  | 1.8 | 0.10 | 0.25 | 0.15 | 0.05    | 0.15    | Rem |  |  |  |
|       | MIN |      |      | 3.8 | 0.30 | 1.2 |      |      |      | Each    | Total   |     |  |  |  |

## Actual Started Chemistry

| LOT/WORK ORDER |     | %SI  | %FE  | %CU | %MN  | %MG | %CR  | %ZN  | %TI  | %OE     | %OT     | %AL |  |  |  |
|----------------|-----|------|------|-----|------|-----|------|------|------|---------|---------|-----|--|--|--|
| MA20132517     | MAX | 0.07 | 0.26 | 4.7 | 0.68 | 1.5 | 0.02 | 0.03 | 0.03 | LT 0.05 | LT 0.15 | Rem |  |  |  |
|                | MIN | 0.06 | 0.24 | 4.5 | 0.62 | 1.4 | 0.01 | 0.00 | 0.02 |         |         |     |  |  |  |

## NOTES:

Mercury is not a normal contaminant in aluminum alloys and neither it nor any of its compounds are used in the manufacture of our product.  
This alloy meets the requirements of EU 2011/65/EC (RoHS) and EU 2000/53/EC for lead, mercury, cadmium and hexavalent chromium.

Q. C. Review

Sig. *N. M. J.*

Date 11/20/13

Lot# 139289B

Page 1

Sold to: AVIBANK MFG PO: 750515 Part: Order No.: 444704

TR clerk signature:

Carlos A Gaspar

K & L Anodizing Corporation  
**Certification**

Order No.: 306153

Date: 12/10/2013

Entry Date: 12/05/2013

Page: 1 of 1

**To:**

Avibank Mfg. Inc.  
11500 Sherman Way  
P.o. Box 9909  
North Hollywood CA 91609-1909

Purchase Order No.: 752922

Packing List No.:

Material: 2024-T4

297424

We are pleased to provide you with the following Certification. The item(s) described were finished and accepted in accordance with the stated specification  
Nadcap Accredited

| Quantity | Part Number / Part Name / Part Description | Pounds |
|----------|--|--------|
| 5,010    | 5-4AB<br>Rev. P<br>Button-Handle           |        |

Mil-A-8625 Rev.F Amend. 1 KLC 001 / KLC 0007

Anodize per Mil-A-8625 Rev. F Am. 1 Type II Class 2 Black.  
Mercury Contamination Free

| Insp. Type                    | Scale | Minimum | Maximum | Number | Other          |
|-------------------------------|-------|---------|---------|--------|----------------|
| <b>Customer Requirements:</b> |       |         |         |        |                |
| Visual                        |       |         |         |        | Sample or 100% |

LSS# 8

Notice: All finishing completed by K & L Anodizing will carry a liability not to exceed the amount of the finishing charges for the work done on any material. The only exception shall be by written agreement signed by both parties.

Q. C. Review

Sig. 

Date 12/11/13

Lot # 1397977

**CERT REVIEW**

MAIN LOT #

1428845, 1438753

COMPONENT LOT #


K030636

NAME

BUTTON HANDLE

CLERK: GV NC DS

Nadcap AS7003 #4908143853 10/31/2015  
Nadcap AC7108 #4908153454 10/31/2014

  
Sharyn McGinity  
K. L. Cert Department  
K & L Anodizing Corp.



Linear Motion. Optimized.

**SHIP TO:** AVIBANK MFG INC  
11500 SHERMAN WAY  
NORTH HOLLYWOOD CA 91605  
United States

### CERTIFICATE OF CONFORMANCE

**DELIVERY NAME:**  
2937200

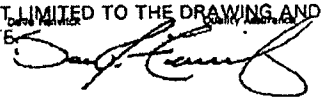
**DATE PRINTED:**  
21-FEB-2014

**PAGE:**  
1 of 1

**SHIP FROM:** ABEK LLC  
492 Birch Street  
Bristol CT 06010  
United States

**Tel:** (860) 314-3921 **Fax:** (860) 314-3942

**BILL TO:** AVIBANK MFG INC  
11500 SHERMAN WAY  
NORTH HOLLYWOOD CA 91605  
United States

| <b>PICK-UP DATE:</b><br>20-FEB-2014   |                   | <b>SHIP METHOD:</b><br>UPS-Truck-Ground                        |                               | <b>FREIGHT TERMS:</b><br>COLLECT - FROM ORIGIN |                         | <b>FSCM:</b>                          |                |                |
|---|-------------------|--|-------------------------------|--|-------------------------|---------------------------------------|----------------|----------------|
| <b>DELIVERY TERMS</b><br>EXWORKS FACTORY  |                   | <b>TAX NAME:</b><br>EXEMPT                                     |                               | <b>CUSTOMER TAX NUMBER:</b>                    |                         | <b>WAYBILL:</b><br>120176470369205040 |                |                |
| <b>SHIPPING INSTRUCTIONS:</b><br>ACCT# 60X10X   |                   |  |                               | <b>TAG NUMBER/REF:</b>                         |                         | <b>PO REF#:</b>                       |                |                |
| ITEM<br>NUMBER  | REFERENCE<br>ITEM | ITEM<br>DESCRIPTION  | CUSTOMER<br>PO NO             | ORDER<br>NO.                                   | LINE<br>ORDER<br>NUMBER | UOM                                   | QTY<br>ORDERED | QTY<br>SHIPPED |
| SS0078121CXXXDF   | SS0078121CXXXDF   | 5/64 440C GRADE<br>100 (DFAR<br>REQUIRED) -<br>SS0078121CXXXDF | 754588                        | 1799757  | 1.1                     | MPC                                   | 100.0          | 97.8           |
| <b>COUNTRY OF ORIGIN:</b><br>****EAR99****  |                   | United States  |                               |  |                         |                                       |                |                |
| <b>Lot Number</b>   | <b>Quantity</b>   | <b>Heat Number</b>   |                               | <b>Hardness Test</b>                           |                         | <b>Hardness</b>                       |                |                |
| L0013815  | 38.8              | G13158K02  |                               | HRC  |                         | 60-63                                 |                |                |
| L0013813  | 15.0              | 548226   |                               | HRC  |                         | 60-62                                 |                |                |
| L0013814  | 44.0              | 548226   |                               | HRC  |                         | 60-62                                 |                |                |
| Material meets DFAR 252.225-7009:7014. ✓<br>Material certs meet ASTM F-2215. ✓<br>Material meets AMS QQ S 783 and AMS 5630 ✓<br>Heat Treat meets AMS 2759/5 ✓<br>Passivation meets AMS 2700 ✓<br>Country of Origin (Ball manufactured): USA<br>Country of Melt (Material manufactured): USA<br><br>These commodities, technology or software, if being exported from the United States must be exported in accordance with the Export Administration Regulations. Diversion contrary to U.S. Law is prohibited. |                   |  |                               |  |                         |                                       |                |                |
| <b>CERT REVIEW</b>  |                   |  |                               |  |                         |                                       |                |                |
| <b>MAIN LOT #</b><br>1428845 1438753  |                   |  |                               |  |                         |                                       |                |                |
| <b>COMPONENT LOT #</b><br>K040065   |                   |  |                               |  |                         |                                       |                |                |
| <b>NAME</b><br>BALL   |                   |  |                               |  |                         |                                       |                |                |
| <b>CLERK:</b> GV NC DS  |                   |  |                               |  |                         |                                       |                |                |
| <b>NUMBER OF PACKAGES</b><br>1  |                   |  | <b>GROSS WEIGHT</b><br>8.0 LB |  |                         | <b>VOLUME</b>                         |                |                |
| THE UNDERSIGNED, INDIVIDUALLY, AND AS THE AUTHORIZED REPRESENTATIVE OF THOMSON INDUSTRIES INC., WARRANTS AND REPRESENTS THAT; ALL THE INFORMATION SUPPLIED ABOVE IS TRUE AND ACCURATE; THE MATERIAL COVERED BY THIS CERTIFICATION CONFORMS TO ALL CONTRACT REQUIREMENTS (INCLUDING BUT NOT LIMITED TO THE DRAWING AND SPECIFICATIONS); THE INSPECTION AND THE ANALYSIS HEREIN ARE TRUE AND ACCURATE.  |                   |  |                               |  |                         |                                       |                |                |
| <br>QUALITY ASSURANCE MANAGER AUTHORIZED SIGNATURE   |                   |  |                               |  |                         |                                       |                |                |

DFARS  
OK

**CERTIFICATE OF TESTS    ABNAHMEPRUEFZEUGNIS    CERTIFICAT DE CONTROLE**

CERT SERIAL# 000564343


**CARPENTER**

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 101 West Bern Street, Reading, Pa. 19601  
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SELLER/VERKÄUFER/VEDEUR PAGE 1 OF 2

| CUSTOMER ORDER NO./BESTELL-NR./N° DE COMMANDE  | CARPENTER NUMBER/S-NR./N° DE REFERENCE INTERNE | DATE/DATUM/DATE | ALN<br>WEIGHT/GEWICHT/POIDS |       |      |       |      |       |      |       |      |       |    |     |    |    |    |    |    |    |    |  |     |    |    |    |    |    |    |    |    |     |    |    |    |    |    |    |    |  |     |    |    |    |    |    |    |    |  |     |    |    |    |    |    |    |    |
|--|--|-----------------|-----------------------------|-------|------|-------|------|-------|------|-------|------|-------|----|-----|----|----|----|----|----|----|----|--|-----|----|----|----|----|----|----|----|----|-----|----|----|----|----|----|----|----|--|-----|----|----|----|----|----|----|----|--|-----|----|----|----|----|----|----|----|
| 213280   | W49841   | 09/11/06        | 659                         |       |      |       |      |       |      |       |      |       |    |     |    |    |    |    |    |    |    |  |     |    |    |    |    |    |    |    |    |     |    |    |    |    |    |    |    |  |     |    |    |    |    |    |    |    |  |     |    |    |    |    |    |    |    |
| <b>HEAT NUMBER / SCHMELZE-NR. / N° DE COULEE    548226</b><br><b>PRODUCT DESCRIPTION: CONSUMET TYPE 440C BEARING QUAL HOT DRAWN SPHEROIDIZED PRECOAT</b><br><b>SPECIFICATION: AMS 5618 REV G (05/06)</b><br><b>                  *AMS-00-S-7638 (08/06)</b><br><b>                  *AMS 5880 REV C (05/06)</b><br><b>                  *AMS 5630 REV J (10/07)</b><br><b>SIZE    0.075000 IN. ( 1.90 MM) RD    WIRE    INGOT 3.</b><br><b>PRIMARY HEAT CHEMISTRY(WT%): (TEST METHOD IS SHOWN IN PARENTHESIS)</b><br><div style="display: flex; justify-content: space-between;"> <span>C (COM)    1.03</span> <span>MN(XRF)    0.40</span> <span>SI(XRF)    0.70</span> <span>P (XRF)    0.017</span> <span>LT    0.01</span> <span>CR(XRF)    16.97</span> </div> <div style="display: flex; justify-content: space-between;"> <span>NI(XRF)    0.15</span> <span>MO(XRF)    0.44</span> <span>CU(XRF)    0.04</span> </div> <b>MACROETCH: TESTED TO ASTM-A-684: MAXIMUM VALUES ARE 1A, 2A, 3A, 4A</b><br><b>TENSILE AS SHIPPED.    KSI(MPA)    110.0( 758)</b><br><b>MAX QUENCH HARDNESS.    HRC - 61 -    1925 F( 1052 C)    30 MN OIL TREAT</b><br><b>INCLUSION RATING - ASTM E45 METHOD D</b><br><table style="width: 100%; text-align: center;"> <thead> <tr> <th>ID</th> <th>THIN</th> <th>HEAVY</th> <th>THIN</th> <th>HEAVY</th> <th>THIN</th> <th>HEAVY</th> <th>THIN</th> <th>HEAVY</th> </tr> </thead> <tbody> <tr> <td>3X</td> <td>1.0</td> <td>00</td> <td>00</td> <td>00</td> <td>00</td> <td>00</td> <td>00</td> <td>00</td> </tr> <tr> <td></td> <td>2.0</td> <td>00</td> <td>00</td> <td>00</td> <td>00</td> <td>00</td> <td>00</td> <td>00</td> </tr> <tr> <td>3A</td> <td>2.0</td> <td>00</td> <td>00</td> <td>00</td> <td>00</td> <td>00</td> <td>00</td> <td>00</td> </tr> <tr> <td></td> <td>1.0</td> <td>00</td> <td>00</td> <td>00</td> <td>00</td> <td>00</td> <td>00</td> <td>00</td> </tr> <tr> <td></td> <td>2.0</td> <td>00</td> <td>00</td> <td>00</td> <td>00</td> <td>00</td> <td>00</td> <td>00</td> </tr> </tbody> </table> <b>FRACTURE GRAIN SIZE:    8</b><br><b>CARBIDE SEGREGATION - FREE FROM EXCESSIVE SEG    (VILELLAS)</b><br><b>DECARB - NONE    (VILELLAS)</b><br><b>MAX QUENCH HARDNESS.    HRC - 61 -    1875 F( 1024 C)    30 MN AIR COOL</b> |  |                 |                             | ID    | THIN | HEAVY | THIN | HEAVY | THIN | HEAVY | THIN | HEAVY | 3X | 1.0 | 00 | 00 | 00 | 00 | 00 | 00 | 00 |  | 2.0 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 3A | 2.0 | 00 | 00 | 00 | 00 | 00 | 00 | 00 |  | 1.0 | 00 | 00 | 00 | 00 | 00 | 00 | 00 |  | 2.0 | 00 | 00 | 00 | 00 | 00 | 00 | 00 |
| ID   | THIN   | HEAVY           | THIN                        | HEAVY | THIN | HEAVY | THIN | HEAVY |      |       |      |       |    |     |    |    |    |    |    |    |    |  |     |    |    |    |    |    |    |    |    |     |    |    |    |    |    |    |    |  |     |    |    |    |    |    |    |    |  |     |    |    |    |    |    |    |    |
| 3X   | 1.0  | 00              | 00                          | 00    | 00   | 00    | 00   | 00    |      |       |      |       |    |     |    |    |    |    |    |    |    |  |     |    |    |    |    |    |    |    |    |     |    |    |    |    |    |    |    |  |     |    |    |    |    |    |    |    |  |     |    |    |    |    |    |    |    |
|  | 2.0  | 00              | 00                          | 00    | 00   | 00    | 00   | 00    |      |       |      |       |    |     |    |    |    |    |    |    |    |  |     |    |    |    |    |    |    |    |    |     |    |    |    |    |    |    |    |  |     |    |    |    |    |    |    |    |  |     |    |    |    |    |    |    |    |
| 3A   | 2.0  | 00              | 00                          | 00    | 00   | 00    | 00   | 00    |      |       |      |       |    |     |    |    |    |    |    |    |    |  |     |    |    |    |    |    |    |    |    |     |    |    |    |    |    |    |    |  |     |    |    |    |    |    |    |    |  |     |    |    |    |    |    |    |    |
|  | 1.0  | 00              | 00                          | 00    | 00   | 00    | 00   | 00    |      |       |      |       |    |     |    |    |    |    |    |    |    |  |     |    |    |    |    |    |    |    |    |     |    |    |    |    |    |    |    |  |     |    |    |    |    |    |    |    |  |     |    |    |    |    |    |    |    |
|  | 2.0  | 00              | 00                          | 00    | 00   | 00    | 00   | 00    |      |       |      |       |    |     |    |    |    |    |    |    |    |  |     |    |    |    |    |    |    |    |    |     |    |    |    |    |    |    |    |  |     |    |    |    |    |    |    |    |  |     |    |    |    |    |    |    |    |

CONTINUED ON NEXT PAGE

*Deanna M. Kieselring*

This certification is made to the customer printed on this form. Carpenter neither makes, nor assumes responsibility for, any representation or certification to other parties.  
 Die vorliegende Zertifizierung ist nur für den in diesem Formular genannten Kunden gültig. Carpenter übernimmt gegenüber Dritten keine Haftung für die ausgereichten Daten oder Zertifizierungen.  
 Ce certificat est uniquement valable pour le client dont le nom est imprimé sur ce formulaire. Carpenter n'assume pas de responsabilité pour une certification vis-à-vis d'une tierce personne.

**CERTIFICATE OF TESTS    ABNAHMEPRUEFZEUGNIS    CERTIFICAT DE CONTROLE**

CERT SERIAL# 000564343


**CARPENTER**

 Carpenter Technology Corporation  
 101 West Bern Street, Reading, Pa. 19601  
 Tel: (610) 200-2000 (800) 338-4592

- THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FEDERAL STATUTES INCLUDING FEDERAL LAW, TITLE 18, CHAPTER 47.
- THE VALUES AND OTHER TECHNICAL DATA REPRESENT THE RESULTS OF ANALYSES AND TESTS MADE ON SAMPLES COLLECTED FROM THE TOTAL LOT. ORIGINAL DATA RECORDS CAN BE TRACED BY REFERENCE TO THE CARPENTER ORDER NUMBER.
- MATERIAL IS MANUFACTURED FREE FROM MERCURY, RADIUM, ALPHA AND BAKKA SOURCE CONTAMINATION.
- THIS DOCUMENT SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN CONSENT OF CARPENTER TECHNOLOGY CORPORATION.

SELLER/VERKÄUFER/VEDEUR PAGE 2 OF 2

ALN

| CUSTOMER ORDER NO./BESTELL-NR./N° DE COMMANDE | CARPENTER NUMBER/NR./N° DE REFERENCE INTERNE | DATE/DATUM/DATE | WEIGHT/GEWICHT/POIDS |
|---|--|-----------------|----------------------|
| 213280  | W49841                                       | 09/11/06        | 659                  |

 HEAT NUMBER / SCHMELZE-NR. / N° DE COULEE 548226  
 BILLET CHECK CHEMISTRY (WT%):

 3A (TOP) C  
 3X (BOTTOM) 1.06  
 1.04

MATERIAL PRODUCED ON THIS ORDER WAS MELTED AND MANUFACTURED IN THE U.S.A. MATERIAL HAS BEEN MELTED IN USA OR QUALIFYING COUNTRY TO DFARS REQUIREMENTS 252.225-7014 WITH ALTERNATE 1 FOR QUALIFYING COUNTRY 225.872.1. CARPENTER'S QUALITY MANAGEMENT SYSTEM WAS REGISTERED AS OF NOVEMBER 24, 2007 TO THE REQUIREMENTS OF ISO 9001:2000 APPROVAL CERTIFICATE 07-0869 BY PERFORMANCE REVIEW INSTITUTE. CERTIFICATE OF TEST IS PREPARED IN ACCORDANCE WITH PARAGRAPH 3.1 OF EN 10204 (DIN 50049). WE HEREBY CERTIFY THAT THE ABOVE TEST DATA ARE IN ACCORDANCE WITH THE PURCHASE ORDER AND SPECIFICATION REQUIREMENTS.

DATE REVISED: 01/19/10

 DEANA KISSLING  
 MET RELEASE REQUIREMENTS ANALYST  
 CARPENTER TECHNOLOGY CORPORATION

 DFARS  
 OK

*Deana M. Kissling*

Order No: 3748481  
Time 13:14:18



**FRY STEEL COMPANY**  
Registered ISO 9001  
13325 MOLETTE ST.  
SANTA FE SPRINGS, CA 90670  
(562) 802-2721

A08040  
Cust. NO.: 760385  
P.O. NO.:

## CERTIFICATE OF COMPLIANCE

AVIBANK MFG INC  
ATTN: ACCTS PAYABLE  
P O BOX 9909  
NORTH HOLLYWOOD CA 91609-1909

AVIBANK MFG  
11500 SHERMAN WAY  
\*\*\*RECEIVING CLOSED 11:30-12\*\*  
NORTH HOLLYWOOD CA 91605-5827

04/24/14

| QTY | --DESCRIPTION--   | --ITEM CODE-- | --HEAT NUMBER-- |
|-----|---|---------------|-----------------|
|     | CG 17CR 4NI PPT HT SOL TR PH<br>AMS 5643<br>SILVER/RED        |               |                 |
|     | BARS .255"RD 12'RL  | 9170          | E131099         |
|     | SHIP TOTAL STOCK 552 LBS<br>OF HEAT E131099<br>COMPS. 3748031 |               |                 |

### CERT REVIEW

MAIN LOT #

1428845

COMPONENT LOT #

1435320

NAME

BODY

CLERK: /GV\_\_\_ NC ☒ DS\_\_\_

### NOTICE

A COPY OF THE ORIGINAL MILL CERTIFICATION IS ATTACHED\*

CHEMICALS & PHYSICALS ARE REPORTED THAT WILL MEET THE SPECIFICATIONS SHOWN ON THE CERTIFICATE.  
EXCEPTIONS TO SPECIFICATIONS SHOULD BE SHOWN ON THE CERTIFICATION.

AUTOMATIC EXCEPTIONS TO THE SPECS LISTED ARE: LINE MARKING AND INSPECTION (I.E. MAG., SONIC, ETC.)

WE SUGGEST CONSULTING AN EXPERT ABOUT RELATED INSPECTION, PRIOR TO ALTERING THE MATERIAL FROM THE AS SHIPPED/RECEIVED  
CONDITION. "DEFECT FREE" MATERIAL CAN NOT BE GUARANTEED WITHOUT PRIOR INSPECTION APPROPRIATE TO APPLICATION.

NO WELD REPAIR HAS BEEN PERFORMED AND THIS MATERIAL IS FREE FROM MERCURY AND RADIUM  
CONTAMINATION AT TIME OF SHIPMENT

The willful recording of false, fictitious or fraudulent statements on this document may result as a felony under federal statutes.  
\*WHEN APPLICABLE

— TO THE BEST OF OUR KNOWLEDGE MATERIAL IS CONFLICT MINERAL FREE —

Q. C. Review

Sig. *Nomah*

Date 4/30/14

Lot # 1436405

*Chip Sandoval*  
CHIP SANDOVAL - Q.C. MANAGER

FRY STEEL CO. CERTIFIES THAT THIS IS  
A TRUE COPY OF THE ORIGINAL MILL TEST  
REPORT NOW ON FILE  
RECEIVED AND INSPECTED

TRI STAR METALS, LLC  
375 VILLAGE DR.  
CAROL STREAM, IL 60188  
An ISO 9001:2008 Registered Company

JAN 03 2014

BY *[Signature]*  
FRY SANDOVAL - Q.C. MANAGER

CERTIFICATE DATE: 12/26/13      CUSTOMER: FRY STEEL COMPANY  
ORDER#: 204303      CUSTOMER PO#: 47722-1  
MATERIAL: 17-4PH ✓      DESCRIPTION: .255" RD SS X 12' ✓  
HEAT NUMBER: E131099      QTY. SHIPPED: 1,920 LBS  
CONDITION: A - Solution Annealed, A.Q., Centerless Ground      PART #: 9170

CHEMICAL COMPOSITION

| C    | Mn   | Si   | S     | P    | Ni   | Cr    | Mo   | Other Elements   |
|------|------|------|-------|------|------|-------|------|--|
| .015 | .730 | .408 | .0280 | .023 | 4.68 | 15.38 | .170 | ✓ Cu=3.349 Co=.089<br>N=.0310 Ti=.002<br>✓ Nb=.2510 Al=.002<br>B=.0016 Sn=.008<br>V=.050 W=.020<br>As=.006 Ca=.001<br>Ta=.002 Pb=.0002 |
| ✓    | ✓    | ✓    | ✓     | ✓    | ✓    | ✓     | ✓    |  |

MECHANICAL VALUES

| TENSILE (KSI) | YIELD (KSI) | ELONGATION (%) | REDUCTION OF AREA (%) | HARDNESS |
|---------------|-------------|----------------|-----------------------|----------|
| 134           | 122         | 14             | 67                    | 271 HB   |

✓ AFTER HT CAPABILITIES 900F 1 HOUR AIR COOL

| TENSILE (KSI) | YIELD (KSI) | ELONGATION (%) | REDUCTION OF AREA (%) | HARDNESS |
|---------------|-------------|----------------|-----------------------|----------|
| 201           | 199         | 12             | 54                    | 410 HB   |

✓ ADDITIONAL REMARKS:

This material meets the specifications for: SOLUTION ANNEALED AT 1900F FOR 1.5 HRS;  
AMS 5643R, AMS 2303E; ASTM A484-10; Capable of ASTM A564-04 TYPE 630, ASME  
A564-04 TYPE 630, & MBO-160-003 EXC HARDNESS & ULTRASONIC; DFARS 252.225.7014 &  
225.7002-3(b) (1) COMPLIANT; Delta Ferrite=.38%; Micro & Macro Structures OK per AMS 5643

MATERIAL IS FREE FROM MERCURY CONTAMINATION. EN10204 3.1.B  
MELT ORIGIN: ENGLAND

**MATERIAL IS MANUFACTURED IN THE UNITED STATES OF AMERICA**

I hereby certify that this data is correct as contained in the records of this company.

QUALITY CONTROL REPRESENTATIVE:  
QSD-067 REV. ORG. 4/17/2013

*[Signature]*  
James P. Elliott-Quality Process Manager

Q. C. Review

Sig. *[Signature]*

Date: 4/30/14

Lot# 1436405

E131099

255 RD





Order No: 3748031  
Time 07:06:05



**FRY STEEL COMPANY**  
Registered ISO 9001  
13325 MOLETTE ST.  
SANTA FE SPRINGS, CA 90670  
(562) 802-2721

A08040  
Cust. NO.: 760385  
P.O. NO.:

## CERTIFICATE OF COMPLIANCE

AVIBANK MFG INC  
ATTN: ACCTS PAYABLE  
P O BOX 9909  
NORTH HOLLYWOOD CA 91609-1909

AVIBANK MFG  
11500 SHERMAN WAY  
\*\*\*RECEIVING CLOSED 11:30-12\*\*  
NORTH HOLLYWOOD CA 91605-5827

04/23/14

| QTY | --DESCRIPTION--  | --ITEM CODE-- | --HEAT NUMBER-- |
|-----|--|---------------|-----------------|
|     | ✓ CG 17CR 4NI PPT HT SOL TR PH<br>AMS 5643<br>SILVER/RED |               |                 |
| 250 | ✓ BARS .130"RD 12'RL                                     | 9070          | E131099 ✓       |
| 440 | BARS .1925"RD 12'RL                                      | 9120          | E130790         |
| 75  | BARS .505"RD 12'RL                                       | 9380          | G20854          |
| 75  | BARS .630"RD 12'RL                                       | 9450          | 571176          |
| 25  | BARS .755"RD 12'RL                                       | 9510          | 571616          |

### CERT REVIEW

MAIN LOT #

1428845

COMPONENT LOT #

1435371

NAME

SPINDLE

CLERK: GV — NC ~~X~~ DS —

### NOTICE

A COPY OF THE ORIGINAL MILL CERTIFICATION IS ATTACHED\*

CHEMICALS & PHYSICALS ARE REPORTED THAT WILL MEET THE SPECIFICATIONS SHOWN ON THE CERTIFICATE.  
EXCEPTIONS TO SPECIFICATIONS SHOULD BE SHOWN ON THE CERTIFICATION.

AUTOMATIC EXCEPTIONS TO THE SPECS LISTED ARE: LINE MARKING AND INSPECTION(I.E. MAG., SONIC, ETC.)

WE SUGGEST CONSULTING AN EXPERT ABOUT RELATED INSPECTION, PRIOR TO ALTERING THE MATERIAL FROM THE AS SHIPPED/RECEIVED  
CONDITION. "DEFECT FREE" MATERIAL CAN NOT BE GUARANTEED WITHOUT PRIOR INSPECTION APPROPRIATE TO APPLICATION.

NO WELD REPAIR HAS BEEN PERFORMED AND THIS MATERIAL IS FREE FROM MERCURY AND RADIUM  
CONTAMINATION AT TIME OF SHIPMENT

The willful recording of false, fictitious or fraudulent statements on this document may result as a felony under federal statutes.  
\*WHEN APPLICABLE

— TO THE BEST OF OUR KNOWLEDGE MATERIAL IS CONFLICT MINERAL FREE —

Q. C. Review

Sig. *[Signature]*

Date 4/29/14

Lot # 1436397

*[Signature]*  
CHIP SANDOVAL - Q.C. MANAGER

FRY STEEL CO. CERTIFIES THAT THIS IS  
A TRUE COPY OF THE ORIGINAL MILL TEST  
REPORT NOW ON FILE  
RECEIVED AND INSPECTED

TRI STAR METALS, LLC  
375 VILLAGE DR.  
CAROL STREAM, IL 60188  
An ISO 9001:2008 Registered Company

FEB 10 2014

CHIP SANDOVAL - Q.C. MANAGER

CERTIFICATE DATE: 02/07/14 CUSTOMER: FRY STEEL COMPANY  
ORDER#: 205486 CUSTOMER PO#: 47795-1  
MATERIAL: 17-4PH ✓ DESCRIPTION: .130" RD SS X 12" ✓  
HEAT NUMBER: E131089 QTY. SHIPPED: 2,003 LBS  
CONDITION: A - Solution Annealed, A.Q., Centerless Ground PART #: 9070

CHEMICAL COMPOSITION

| C ✓  | Mn ✓ | Si ✓ | S ✓   | P ✓  | NI ✓ | Cr ✓  | Mo ✓ | Other Elements   |
|------|------|------|-------|------|------|-------|------|--|
| .015 | .730 | .408 | .0280 | .023 | 4.68 | 15.38 | .170 | ✓ Cu=3.349 Co=.089<br>N=.0310 Ti=.002<br>✓ Nb=.2510 Al=.002<br>B=.0016 Sn=.008<br>V=.050 W=.020<br>As=.006 Ca=.001<br>Ta=.002 Pb=.0002 |

MECHANICAL VALUES

| TENSILE (KSI) | YIELD (KSI) | ELONGATION (%) | REDUCTION OF AREA (%) | HARDNESS |
|---------------|-------------|----------------|-----------------------|----------|
| 146           | 136         | 9              | 47                    | 301 HB   |

AFTER HT CAPABILITIES 900F 1 HOUR AIR COOL

| TENSILE (KSI) | YIELD (KSI) | ELONGATION (%) | REDUCTION OF AREA (%) | HARDNESS |
|---------------|-------------|----------------|-----------------------|----------|
| 201           | 199         | 12             | 54                    | 410 HB   |

ADDITIONAL REMARKS:

This material meets the specifications for: STRAND ANNEALED AT 1900F FOR 4 TO 6 MIN;  
AMS 5643R, AMS 2303E; ASTM A484-10; Capable of ASTM A564-04 TYPE 630, ASME A564-04  
TYPE 630, & MBO-160-003 EXC HARDNESS & ULTRASONIC; DFARS 252.225.7014 & 225.7002-  
3(b) (1) COMPLIANT; Delta Ferrite=.38%; Micro & Macro Structures OK per AMS 5643

MATERIAL IS FREE FROM MERCURY CONTAMINATION. EN10204 3.1.B  
MELT ORIGIN: ENGLAND

MATERIAL IS MANUFACTURED IN THE UNITED STATES OF AMERICA

I hereby certify that this data is correct as contained in the records of this company.

QUALITY CONTROL REPRESENTATIVE:

QSD-007 REV. ORG. 4/17/2013

James P. Elliott Quality Process Manager



Q. C. Review

Sig. [Signature]

Date 2/5/14

LOT# 1436397

E131099

.130 RD

Order No: 3702738  
Time 16:17:08



**FRY STEEL COMPANY**  
Registered ISO 9001  
13325 MOLETTE ST.  
SANTA FE SPRINGS, CA 90670  
(562) 802-2721

A08040  
Cust. NO.: 755061  
P.O. NO.:

## CERTIFICATE OF COMPLIANCE

AVIBANK MFG INC  
ATTN: ACCTS PAYABLE  
P O BOX 9909  
NORTH HOLLYWOOD CA 91609-1909

AVIBANK MFG  
11500 SHERMAN WAY  
\*\*\*RECEIVING CLOSED 11:30-12\*\*  
NORTH HOLLYWOOD CA 91605-5827

01/17/14

| QTY | -DESCRIPTION-                                      | -ITEM CODE- | -HEAT NUMBER- |
|-----|--|-------------|---------------|
|     | ✓ CF 2024 AL T4<br>QQA 225/6<br>RED                |             |               |
| 342 | ✓ BARS 5/16"RD 12'RL                               | 84030       | 13M215 ✓      |
| 1   | BAR 7/16"RD 12'RL                                  | 84040       | 13M215        |
| 1   | PC 3/8 X 1-1/4"FL CUT 84"LG<br>CUT                 | 86570       | 10112303-5    |
|     | CF 2024 AL T351<br>QQA 225/6<br>RED                |             |               |
| 1   | PC 1-1/8"RD CUT 60"LG<br>CUT                       | 84090       | 152938        |
| 5   | BARS 1-3/16"RD 12'RL                               | 84095       | 13M215        |
|     | EXT 2024 AL T3511<br>QQA 200/3<br>RED/WHITE STRIPE |             |               |
| 3   | BARS 5/8"RD 12'RL<br>CONTINUED...                  | 85810       | ZWB120934     |

### NOTICE

A COPY OF THE ORIGINAL MILL CERTIFICATION IS ATTACHED\*

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CONDITION. "DEFECT FREE" MATERIAL CAN NOT BE GUARANTEED WITHOUT PRIOR INSPECTION APPROPRIATE TO APPLICATION.

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CONTAMINATION AT TIME OF SHIPMENT

The willful recording of false, fictitious or fraudulent statements on this document may result as a felony under federal statutes.  
\*WHEN APPLICABLE

**TO THE BEST OF OUR KNOWLEDGE MATERIAL IS CONFLICT MINERAL FREE -**  
CERT REVIEW

MAIN LOT #

1428845/143875

COMPONENT LOT

KB30692

NAME

BUTTON

CLERK: GV NC DS

Q. C. Review

Sig

Date

2/7/14

CHP SANDOVAL - Q.C. MANAGER

Lot# 1410845

7/16 ED

13M215

**Aluminium Mill Certificate**

Taishan City Kam Kiu Aluminium Extrusion Co. Ltd

Address: Daijiang County, Taishan, Guang Dong, China

Tel: (86) 7505438596 Fax: (86) 7505438173

Cert. No.: KAP628824

Customer: TUSKER INTERNATIONAL TRADING INC. FRY STEEL

Contract No.: US SM130929

Alloy Temper: 2024-T4

Container No.: CBHU6883403/20

2024-T4 ✓

Standards: QQA 225/6 REV E; AMS QQA 225/6 REV A; ASTM B 211 2012; AMS 4120 REV R

Shipment Date: Jul 28 2013

PO No: 47540 1K

Invoice No: MJ31492

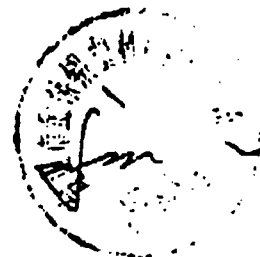
| 2024 Chemical Composition (%) |           |               |                     |          |              |            |              |            |             |              |              |              |       |       |       |         | Tensile Strength      |        | Yield                 |        | Elongation |  |
|-------------------------------|-----------|---------------|---------------------|----------|--------------|------------|--------------|------------|-------------|--------------|--------------|--------------|-------|-------|-------|---------|-----------------------|--------|-----------------------|--------|------------|--|
| Product Code                  | Die No    | Specification | Heat No (Batch No.) | Cast No. | Si 0.50 max. | Mg 1.2-1.8 | Fe 0.50 max. | Cu 3.8-4.9 | Mn 0.30-0.9 | Zn 0.25 max. | Cr 0.10 max. | Ti 0.15 max. | Pb -- | Bi -- | Zr -- | Al Rem. | N/mm <sup>2</sup> 425 | ksi 62 | N/mm <sup>2</sup> 310 | ksi 45 | % 10       |  |
| 8400                          | JET0364-2 | DRAWN ROD     | CFR 5/16            | 13M215   | 0.100        | 1.486      | 0.292        | 4.453      | 0.765       | 0.018        | 0.024        | 0.013        | 0.006 |       |       | Rem.    | 557                   | 81.0   | 523                   | 76.0   | 11.8       |  |
| 8404                          | JET0364-2 | DRAWN ROD     | CFR 7/16            | 13M215   | 0.100        | 1.486      | 0.292        | 4.453      | 0.765       | 0.018        | 0.024        | 0.013        | 0.006 |       |       | Rem.    | 481                   | 70.0   | 423                   | 61.0   | 10.8       |  |

**Remark:**

Kam Kiu Aluminium Group hereby certifies that metal shipped under the above mentioned PO No, Contract No, and Container No has been inspected and tested, and found in conformance with the applicable specifications forming a part of the description set forth in Kam Kiu's Sales Contract. This Mill Test Certificate complies to 3.1 EN 10204.

**Made By:**

Waley

**Checked By:**

Q. C. Review

Sig. Name

Date 2/7/14

Lot# 1410845

FRY STEEL CO. CERTIFIES THAT THIS IS  
A TRUE COPY OF THE ORIGINAL MILL TEST  
REPORT NOW ON FILE  
RECEIVED AND INSPECTED

AUG 23 2013

BY

SHIP SARBONAL - Q.C. MANAGER

Level 18, The Gardens North Tower, Mid Valley City, Lingkaran Syed Putra, 59200 Kuala Lumpur, Malaysia  
E-mail: info@kamkiu.com Web Page: www.kamkiu.com

CFR 5/16

CFR 7/16

**K & L Anodizing Corporation**  
**Certification**

Order No.: 317166

Date: 04/17/2014

Entry Date: 03/31/2014

Page: 1 of 1

**To:**

Avibank Mfg. Inc.  
11500 Sherman Way  
P.O. Box 9909  
North Hollywood CA 91609-1909

Purchase Order No.: 759177

Packing List No.:

Material: 2024-T4

309571

We are pleased to provide you with the following Certification. The item(s) described were finished and accepted in accordance with the stated specification  
Nadcap Accredited

| Quantity | Part Number / Part Name / Part Description | Pounds |
|----------|--|--------|
| 5,010    | 73-4AB<br>Rev. D<br>Button                 |        |

Mil-A-8625 Rev.F Amend. 1 KLC 001 / KLC 0007

Anodize per Mil-A-8625 Rev. F Am. 1 Type II Class 2 Blue.  
Mercury Contamination Free

| Insp. Type                    | Scale | Minimum | Maximum | Number | Other          |
|-------------------------------|-------|---------|---------|--------|----------------|
| <b>Customer Requirements:</b> |       |         |         |        |                |
| Visual                        |       |         |         |        | Sample or 100% |

LSS# 200

Notice: All finishing completed by K & L Anodizing will carry a liability not to exceed the amount of the finishing charges for the work done on any material. The only exception shall be by written agreement signed by both parties.

Q. C. Review

Sig *Nancy*

Date 4/21/14

Lot # 1434189

**CERT REVIEW**

MAIN LOT #

1428845, 1438753

COMPONENT LOT #

FB 30692

NAME

BUTTON

CLERK: GV NC DS

Nadcap AS7003 #4908143853 10/31/2015  
Nadcap AC7108 #4908153454 10/31/2014

*Luisa Sagory*  
Luisa Sagory  
Cert Control  
K & L Anodizing Corp.



# B/E Aerospace, Inc.

Page: 1 of 1

## CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO25711**

| LIN# | QUANTITY | U/M | PART-NUMBER  | CUST REF# | LOT-NUMBER       | MANUFACTURER         | CCODE | MFR DATE | EXP DATE |
|------|----------|-----|--------------|-----------|------------------|----------------------|-------|----------|----------|
| 8    | 400      | EA  | MS20615-4M18 |           | 208112 P001 P001 | AHG ATELIERS HAUTE-G | F0095 |          |          |

  
Jason Lewis  
Vice President of Quality

09/11/14

DATE: 1/25/08

TIME: 14:13:28

AIRSUPPLY DIVISION  
70 HCS ROANOKE  
RECEIPT TRAVELLER: A1059778

PAGE: 2

WSID: RNK7GC91

S/D E1

VENDOR: 1693  
ATELIERS DE LA HAUTE-GARONNE

PURCHASE ORDER: 855942

DATE RECEIVED: 1/25/08

BUYER: RVS



541

RECEIVING:

LINE QUANTITY PART NO./DESCRIPTION  
ITEM RECEIVED



1 25 MS20615-4M18  
RIVET,SOLID



VENDOR ITEM#: DASH GROUP: Source Delegate

QUALITY PROCUREMENT CLAUSES: ABCEHPUV

REV: 3

Std Pkg Size:

QUALITY ASSURANCE:

DEPT. WORK OPERATION/DESCRIPTION  
NO. CENTER NUMBER

SCHEDULE  
DATE

| SAMPLE<br>SIZE | QUANTITY<br>ACCEPTED | QUANTITY<br>REJECTED | MANUFACTURER<br>LOT | BATCH<br>NO. | CURE<br>DATE | HPG LOT # |
|----------------|----------------------|----------------------|---------------------|--------------|--------------|-----------|
| SD             | 25                   | 0                    | 208112-P001 Foo1    | -            | -            | 081041247 |

Quality Documents: A Manufacturer's C of C  
E Chem-Phys or Material Cert  
Manufactured by: 1693 ATELIERS DE LA HAUTE-GARONNE

INSPECTION NOTES:

25 lb = 4950 pcs

STAGING: WAREHOUSE NUMBERS

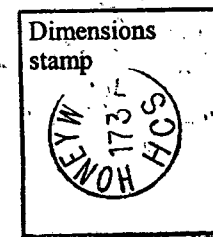
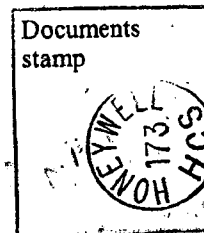
LOCATION ADDRESS

QUANTITIES

LOC: AA7006 INVEST 79JH3A

RCT

<<< End of Form >>>





# B/E Aerospace, Inc.

Page: 1 of 1

## CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO25711**

| LNE# | QUANTITY | U/M | PART-NUMBER  | CUST REF# | LOT-NUMBER | MANUFACTURER  | CCODE | MFR DATE | EXP DATE |
|------|----------|-----|--------------|-----------|------------|---------------|-------|----------|----------|
| 17   | 500      | EA  | MS27039-1-10 |           | 63850      | MAC FASTENERS | 0RPT4 |          |          |

  
Jason Lewis  
Vice President of Quality

09/11/14



**MAC FASTENERS, INC.**  
**1110 ENTERPRISE**  
**OTTAWA, KANSAS 66067**

**CERTIFICATE OF CONFORMANCE  
AND  
MANUFACTURER'S AFFIDAVIT**

CUSTOMER: B/E AEROSPACE

PO: 0JWA22

PART NUMBER: MS27039-1-10

REV: 4

LOT NUMBER: 63850

MANUFACTURED QUANTITY: 116,700

MILL HEAT NUMBER: 8195136

COUNTRY OF ORIGIN: UNITED STATES OF AMERICA

DFARS 252.225.7009 Compliant

**MERCURY FREE CERTIFICATION**

MacFasteners certifies that the parts referenced in the above lot number  
do not contain Mercury or Mercury compounds, and were  
manufactured in a Mercury free environment.

We certify that the parts furnished against the above referenced purchase order were manufactured by MAC  
FASTENERS within the United States, and were processed in accordance with all applicable drawings and  
specifications. Objective evidence of compliance is on file, subject to examination upon request.

Mac Fasteners is an AS9100C Registered Company- SAI GLOBAL - 0058029  
Mac Fasteners is a DISC QSLM approved Manufacturer - CAGE Code 0RFT4  
Mac Fasteners is an Airbus approved Supplier - 203399

DATE: 04/16/14

  
QUALITY ASSURANCE REPRESENTATIVE

**MAC FASTENERS, INC.**  
**1110 EAST ENTERPRISE**  
**OTTAWA, KS 66067**

## CHEMICAL & PHYSICAL TEST REPORT

|                                    |                            |                                |                                     |
|------------------------------------|----------------------------|--------------------------------|-------------------------------------|
| <b>CUSTOMER</b><br>B/E AEROSPACE   | <b>PO NUMBER</b><br>0JWA22 | <b>MFG QUANTITY</b><br>116,700 | <b>DATE</b><br>04/16/14             |
| <b>PART NUMBER</b><br>MS27039-1-10 | <b>REV</b><br>4            | <b>LOT NO</b><br>63850         | <b>PROCUREMENT SPEC</b><br>NASM7839 |

|                              |     |       |    |   |     |     |     |                                    |      |   |                              |       |    |
|------------------------------|-----|-------|----|---|-----|-----|-----|------------------------------------|------|---|------------------------------|-------|----|
| <b>MATERIAL</b><br>TYPE 8740 |     |       |    | <b>MATERIAL SPECIFICATION</b><br>MIL-S-6049/AMS6322 |     |     |     | <b>MILL HEAT NUMBER</b><br>8195136 |      |   | <b>SUPPLIER</b><br>JOHNSTOWN |       |    |
| C                            | Si  | Mn    | P  | S   | Cu  | Ni  | Cr  | Mo                                 | V    | B | Fe                           | Al    | Ti |
| .42                          | .25 | .87   | .  | 010   | .07 | .43 | .50 | .21                                | .003 |   |                              | .027  |    |
|                              | Co  | N     | Bi | Pb  | Mg  | Zn  |     | Nb                                 | Sn   |   |                              | Other |    |
|                              |     | .0064 |    |   |     |     |     |                                    | .004 |   |                              |       |    |

### MECHANICAL TEST RESULTS - TESTING PER NASM1312

| ULTIMATE TENSILE STRENGTH<br>POUNDS |       |
|-------------------------------------|-------|
| 3,360                               | 3,210 |
| 3,300                               | 3,240 |
| 3,270                               | 3,340 |
| 3,320                               | 3,310 |
| 3,260                               | 3,320 |
| 3,240                               |       |
| 3,290                               |       |
| 3,320                               |       |
| MIN. REQ. 2,500                     |       |

| DOUBLE SHEAR STRENGTH<br>POUNDS / PSI |
|---------------------------------------|
| TOO SHORT TO TEST PER<br>NASM1312-13  |
| MIN. REQ.                             |

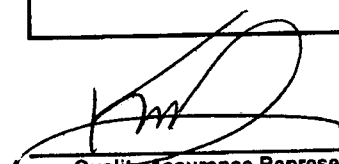
| HARDNESS           |             |
|--------------------|-------------|
| ROCKWELL "C" SCALE |             |
| REQ.               | 26 - 32 HRC |
| SAMPLE SIZE        | 13          |
| ACTUAL RESULTS     |             |
| 28 - 30 HRC        |             |

| METALLURGICAL EXAMINATION                       |                                     |                                    |   |
|---|-------------------------------------|------------------------------------|---|
| Discontinuities                                 | <input checked="" type="checkbox"/> | Carb/Decarb                        | <input checked="" type="checkbox"/>           |
| Grain Flow                                      | <input checked="" type="checkbox"/> | Microstructure                     | <input checked="" type="checkbox"/>           |
| Grain Size                                      | <input checked="" type="checkbox"/> | Appearance                         | <input checked="" type="checkbox"/>           |
| Thread Inspection<br>FED-STD-H28/20 - ASME B1.3 |                                     | System <input type="checkbox"/> 21 | System <input checked="" type="checkbox"/> 22 |
|   |                                     |                                    | System <input type="checkbox"/> 23            |

| NDT/ ADDITIONAL TESTS                            |                                     |
|--|-------------------------------------|
| Magnetic Particle Inspection per<br>ASTM E1444   | <input type="checkbox"/>            |
| Liquid Penetrant Inspection per<br>ASTM E1417    | <input type="checkbox"/>            |
| Recess Torque Test                               | <input type="checkbox"/>            |
| Head Marking                                     | <input checked="" type="checkbox"/> |
| Magnetic Permeability<br>ASTM A342 less than 2.0 | <input type="checkbox"/>            |

### TEST CERTIFICATION

WE CERTIFY THAT THE PART NUMBER, LOT NUMBER, AND SAMPLES REFERENCED ABOVE HAVE BEEN TESTED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATION FOR THE TESTS REPORTED HEREIN. THIS CERTIFICATION SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE APPROVAL OF MAC FASTENERS, INC.

  
 Quality Assurance Representative

**AS9100C REGISTERED**  
**SAI GLOBAL - 0058029**

MAC FASTENERS, INC.  
1110 ENTERPRISE  
OTTAWA, KANSAS 66067

## HEAT TREAT CERTIFICATION

CUSTOMER: B/E AEROSPACE

DATE: 04/16/14

PO NUMBER: 0JWA22

MANUFACTURED QUANTITY: 116,700

PROCESSOR:

PAULO PRODUCTS KCMO - NADCAP ID 4679

LOT NUMBER: 63850

MATERIAL: TYPE 8740

PART NUMBER: MS27039-1-10

REVISION: 4

REQUIRED HARDNESS: 26 - 32 HRC

SAMPLE SIZE: 13

HARDNESS: 28 - 30 HRC

HEAT TREAT SPECIFICATION AS APPLICABLE: MIL-H-6875/AMS-H-6875/AMS2759/AMS5853/PS-1001

Notes:

The fasteners referenced in this report have been processed, inspected and certified by the Heat Treat Contractor in accordance with all applicable drawings and specifications. Heat Treatment has been verified in accordance with procurement specification and part drawing, by metallurgical and mechanical testing as applicable. Evidence of compliance as well as certification from the Heat Treat Contractor is on file and subject to examination upon request.



QUALITY ASSURANCE REPRESENTATIVE

MacFasteners, Inc. is an AS9100C Registered Company - SAI GLOBAL - 0058029

COMMERCIAL PLATING COMPANY

TC-4500 XRF ST

Wed Dec 10 04:37:40 1997

COMMERCIAL PLATING CERTIFICATION AND TEST RESULTS

This is to certify that the order described below was plated to comply with the agreed upon requirements of the requested specification.

DATE: 04/12/14

CUSTOMER: MAC FASTENERS

PART NUMBER: MS27039-1-10

DESCRIPTION: SCREW

ORDER NUMBER: 97666

LOT NUMBER: 63850

TOTAL WEIGHT: 793 LBS

PIECES PLATE TO GAUGE: Y

SPECIFICATION: SAE AMS QQ-P-416C, TYPE II, CLASS 2

REQUIREMENTS: 0.0003 CAD. MIN. AND YELLOW CHROMATE

AUTHORIZED SIGNATURE:

TITLE: QUALITY CONTROL MANAGER





# Johnstown Wire Technologies

124 Laurel Ave,  
Johnstown, PA 15906

Phone: 814-532-5680  
Fax: 814-532-5684

WORK ORDER  
028482

## TEST REPORT

LOT NUMBER  
K-8195136

SALES ORDER / RLS  
005773 / 4

SOLD TO

Mac Fasteners, Inc.  
1110 Enterprise Street  
Ottawa, KS 66067  
USA



|   |                         |                          |              |                       |                             |           |
|---|-------------------------|--------------------------|--------------|-----------------------|-----------------------------|-----------|
| CUSTOMER P.O.<br>50516  | CUSTOMER PART           | QUANTITY<br>10,262 LBS   | COILS<br>6   | LADING NO<br>00122583 | SHIPMENT DATE<br>02/17/2014 |           |
| SPECIFICATION MacFast-87186<br>AMS2301; AMS6322; AMS-S-6049A; MIL-S-6049A 8740 DFARS Defense Federal Acquisition Regulation<br>Supplement Silicon Killed Fine Grain Aircraft Quality/Cold Heading Quality Drawn From Annealed Rod<br>Spheroidize Annealed In Process Heavy Phos & Light Lube Ctd<br>Size: .1865 +.001 -.000 |                         |                          |              |                       |                             |           |
| CERTIFICATION REQUIREMENTS  |                         |                          |              |                       |                             |           |
| Chemical  |                         |                          |              |                       |                             |           |
| C<br>.42  | Mn<br>.87               | P<br>.010                | S<br>.012    | Si<br>.25             | Al<br>.027                  | Ni<br>.43 |
| Cr<br>.50   | Mo<br>.21               | Cu<br>.07                | V<br>.003    |                       |                             |           |
| Cb<br>.000  | Ti<br>???????           | N<br>.0064               | Sn<br>.004   |                       |                             |           |
| Physical  |                         |                          |              |                       |                             |           |
| AMS 2301<br>0000  | J1<br>58                | J10<br>41                | J11<br>39    | J12<br>38             | J2<br>58                    | J3<br>57  |
| J5<br>55  | J4<br>56                | J6<br>53                 | J7<br>51     | J8<br>47              | J9<br>44                    |           |
| MacroClean E-381<br>111   |                         |                          |              |                       |                             |           |
| Mechanical  |                         |                          |              |                       |                             |           |
| TEST  | UNITS                   | HIGH                     | LOW          | AVERAGE               |                             |           |
| Tensile Str   | Lbs/SqIn                | 85000                    | 82000        | 84000                 |                             |           |
| RA Per Cent   | Percent                 | 71.8                     | 71.2         | 71.5                  |                             |           |
| Decarb FFD  | Inches                  | .000                     | .000         | .000                  |                             |           |
| Surface def. depth  | Inches                  | .000                     | .000         | .000                  |                             |           |
| Rod / Melt Source   |                         |                          |              |                       |                             |           |
| Rod Source<br>Republic  | Melt Source<br>Republic | Country of Origin<br>USA | Nafta<br>Yes |                       |                             |           |
| End of Certification  |                         |                          |              |                       |                             |           |

I certify that the results are a true and correct copy of the records prepared and maintained by JOHNSTOWN WIRE TECHNOLOGIES in compliance with the requirements of the cited specification. Chemistry is as reported by the rod / bar supplier and is not in JWT A2LA accreditation. This test report cannot be reproduced or distributed except in full without the written permission of JOHNSTOWN WIRE TECHNOLOGIES. The test results certified herein relate only to the items tested.

*Daniel J. Malik*  
Daniel J. Malik Director of Quality Assurance



1807 EAST 28TH ST.  
 STUCCO: 330-438-8550

LOHMAN, OH 44035  
 FAX: 330-438-3695

## CERTIFICATE OF TESTS

REPUBLIC STEEL

1/15/2014  
 2:55:00 PM  
 PAGE 1 OF 2

PURCHASE ORD: 95078A  
 PART NUMBER: FXT40AA-.297  
 ORDER NUMBER: 1571634 - 01  
 HEAT: 8195136

PURCHASE ORDER DATE: 10/31/2013  
 ACCOUNT NUMBER: 5672-1920-01  
 SCHEDULE: 2434-94  
 REVISION: 1

===== SHIP TO =====

JOHNSTOWN WIRE TECHNOLOGIES  
 124 LAUREL AVE  
 JOHNSTOWN, PA 15906

JOHNSTOWN WIRE TECHNOLOGIES  
 EDWARD ZAPOLA  
 124 LAUREL AVE  
 TRUCK STOP 9 ROD DOCK  
 JOHNSTOWN, PA 15904

## ----- MATERIAL DESCRIPTION -----

HOT ROLLED STEEL COILS ALLOY JOHNSTOWN WIRE SPEC RW-100 REVISION DTD 04/21/04 EXC PARA 10.3 AMS  
 6322N EXC HARD JOHNSTOWN WIRE SPEC PART NO. FXT40AA REVISION DTD 12/31/00 MIL S 6049A & AMD 1 COND  
 B-1 EXC MARK & UT WAIVED AMS 2301K JOHNSTOWN WIRE SPEC RW-005 REVISION DTD 12/31/00 EXC SURFACE  
 DEFECTS EF-AISI-8740-H FINE GRAIN VACUUM DEGASSED AIRCRAFT QUALITY FIXED PRACTICE QUALITY RESTRICTED  
 CHEMISTRY RESTRICTED MAX INCIDENTAL ELEMENTS  
 SIZE: RDS .2970 DIAM X COIL  
 RDS 7.5438MM DIAM X COIL

## ----- LADLE CHEMISTRY % -----

| C     | MN   | P     | S     | SI     | CU    | NI     | CR   |
|-------|------|-------|-------|--------|-------|--------|------|
| 0.42  | 0.87 | 0.010 | 0.012 | 0.25   | 0.07  | 0.43   | 0.50 |
| V     | MO   | SN    | AL    | B      | CB    | N      |      |
| 0.003 | 0.21 | 0.004 | 0.027 | 0.0000 | 0.000 | 0.0064 |      |

## ----- CALCULATED TESTS -----

REDUCTION RATIO 1,877.4 TO 1

## ----- SEMI - FINISHED RESULTS -----

GRAIN SIZE TEST ASTM A29/ASTM E112  
 PCE H30301 MCQUAID = 7.00000

JOMINY HARDNESS TEST SAE J406/ASTM A255  
 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 18 20 22 24 26 28 30 32  
 58 58 57 56 55 53 51 47 44 41 39 38 36 35 34 34 32 32 30 30 30 29 29 28

MACRO ETCH TEST ASTM E381/MIL STD 430  
 ETCHANT: HCL TEMPERATURE: 170  
 S R C  
 AVG 1 1 1

MAGNETIC PARTICLE TEST AMS 2301 AMS2304 AMS2300  
 IND AVG IND AVG  
 FREQ FREQ SEV SEV  
 PCE 03 0 0 0 0

## ----- FINISHED SIZE RESULTS -----

DECARBURIZATION TEST SAE J419/ASTM E1077/JIS G0558  
 ETCHANT = NITAL MAGNIFICATION = 100X

|         | SPIKE  | COMPLETE | TOTAL  |
|---------|--------|----------|--------|
|         | INCHES | INCHES   | DEPTH  |
|         |        |          | INCHES |
| PCE 477 | 0.002  | 0        | 0.001  |

G. KRUTH  
 DIRECTOR QUALITY ASSURANCE

BY DEBORAH STOKES

*MT Kruth*



## CERTIFICATE OF TESTS

1801 EAST 28TH ST.  
PHONE: 330-430-5580LORAIN, OH 44055  
FAX: 330-430-3495

REPUBLIC STEEL

1/15/2014  
2:35:00 PM  
PAGE 2 OF 2PURCHASE ORD: 95078A  
PART NUMBER: FXT40AA-.297  
ORDER NUMBER: 1571634 - 01  
HEAT: 8195136PURCHASE ORDER DATE: 10/31/2013  
ACCOUNT NUMBER: 5672-1920-01  
SCHEDULE: 2434-94  
REVISION: 1

CAPABLE OF SEAM DEPTH 1/4 MAX DIAMETER NOT LESS THAN .005 MAX

## NOTES

CHEMICAL ANALYSIS CONFORMS TO APPLICABLE SPECS: ASTM E415, LBL10129, LBL10130, ASTM E1019, LBL10158, LBL10114, AND ASTM E1085, LBL10184, LBL10188.

## NOTES (CONTINUED)

REPUBLIC STEEL HEREBY CERTIFIES THAT THE MATERIAL LISTED HEREIN HAS BEEN INSPECTED AND TESTED IN ACCORDANCE WITH THE METHODS PRESCRIBED IN THE GOVERNING SPECIFICATIONS AND BASED UPON THE RESULTS OF SUCH INSPECTION AND TESTING HAS BEEN APPROVED FOR CONFORMANCE TO THE SPECIFICATIONS.

CERTIFICATE OF TESTS SHALL NOT BE REPRODUCED EXCEPT IN FULL.

ALL TESTING HAS BEEN PERFORMED USING THE CURRENT REVISION OF THE TESTING SPECIFICATIONS.

RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FED STATUTES TITLE 18 CHAPTER 47.

THE MATERIAL WAS NOT EXPOSED TO MERCURY OR ANY METAL ALLOY THAT IS LIQUID AT AMBIENT TEMPERATURE DURING PROCESSING OR WHILE IN OUR POSSESSION.

NO WELD OR WELD REPAIR WAS PERFORMED ON THIS MATERIAL.

THE RESULTS REPORTED RELATE ONLY TO THE ITEMS TESTED.

## SOURCE INFORMATION

MELT SOURCE: CANTON CAST ROLL MELT COUNTRY: U.S.A HOT ROLL SOURCE: LORAIN 9/10, U.S.A  
MELT METHOD: EF BLOOM RED. RATIO: 1877.4

END OF DATA CC END OF DATA

WITH SHIPMENT 1 COPY PRINTED AT SHIPPING AREA  
FAX SHIP TO 1 COPY ATTENTION EDWARD ZAPOLA 1-814-532-5684  
FILE 1 COPYG. KRUTH  
DIRECTOR QUALITY ASSURANCE

BY DEBORAH STOKES



# B/E Aerospace, Inc.

Page: 1 of 1

## CONSUMABLES MANAGEMENT

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Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


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The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO25711**

| LINE# | QUANTITY | U/M | PART-NUMBER | CUST REF# | LOT-NUMBER  | MANUFACTURER | CCODE | MFR DATE | EXP DATE |
|-------|----------|-----|-------------|-----------|-------------|--------------|-------|----------|----------|
| 18    | 100      | EA  | MS9321-09   |           | 1029-6/4/14 | MOELLER MFG  | 58009 |          |          |

  
\_\_\_\_\_  
Jason Lewis  
Vice President of Quality

09/11/14



**MAC FASTENERS, INC.**  
**1110 ENTERPRISE**  
**OTTAWA, KANSAS 66067**

**CERTIFICATE OF CONFORMANCE  
AND  
MANUFACTURER'S AFFIDAVIT**

CUSTOMER: B/E AEROSPACE

PO: 0PXJ48

PART NUMBER: NAS1102E3-10

REV: 10

LOT NUMBER: 68706

MANUFACTURED QUANTITY: 62,000

MILL HEAT NUMBER: QP621/34

COUNTRY OF ORIGIN: UNITED STATES OF AMERICA

DFARS 252.225.7009 Compliant

**MERCURY FREE CERTIFICATION**

MacFasteners certifies that the parts referenced in the above lot number  
do not contain Mercury or Mercury compounds, and were  
manufactured in a Mercury free environment.

We certify that the parts furnished against the above referenced purchase order were manufactured by MAC  
FASTENERS within the United States, and were processed in accordance with all applicable drawings and  
specifications. Objective evidence of compliance is on file, subject to examination upon request.

Mac Fasteners is an AS9100C Registered Company- SAI GLOBAL - 0058029  
Mac Fasteners is a DISC QSLM approved Manufacturer - CAGE Code 0RFT4  
Mac Fasteners is an Airbus approved Supplier - 203399

DATE: 05/06/14

  
QUALITY ASSURANCE REPRESENTATIVE

**MOELLER MFG. & SUPPLY, INC.**

805 EAST CERRITOS • ANAHEIM, CA 92805

(714) 999-5551 • FAX (714) 999-5970

<http://www.moellermfg.com>

cage code: 58009

SHIPPER NO. :

60605

**CERTIFICATION****PACKING LIST**S  
O  
L  
D  
B/E AEROSPACE, INC  
CONSUMABLES MGMT  
PO BOX 025263

MIAMI

FL 33102-5263

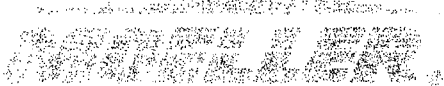
Customer #: B/E AER-FL

S  
H  
I  
P  
T  
O  
B/E AEROSPACE CONSUMABLES  
MANAGEMENT  
9835 NW 14TH ST

MIAMI

FL 33172

P.O. #: 0XML49

| DATE ORDER REC'D. | ORDER NO. | COMMENTS  | SHIPPED VIA   | TERMS  | DUE   |
|-------------------|-----------|-----------|---------------|--|---|
| 6/3/2014          | 0XML49    |           | FEDXFRTECO    | 1%-10/N-30   | 8/4/2014  |
| ITEM              | ORDERED   | SCHEDULED | SHIPPED       | PART NUMBER/DESCRIPTION  | NET WT.   |
| 01                | 250,000   | 125,000   | 125,000<br>SG | MS9321-09<br>REV. N/C<br>LOT 1029- 6/4/14<br><br>SCHEDULED DELIVERY<br>FULL CERTS<br>DFAR 252.225-7009<br>AA.1BCHPUV<br><br> | {N} 1 BOX<br>641 BOX1 5,000<br>724<br>782 6 BOXES<br>20,000 EA<br>9.73<br>38.60 |

MANUFACTURED IN THE U.S.A.

MOELLER MFG. &amp; SUPPLY, INC. - PACKING LIST &amp; CERTIFICATION

WE CERTIFY THAT THE MATERIAL ON THIS ORDER CONFORMS IN ALL RESPECTS TO THE CURRENT APPLICABLE GOVERNMENT AND/OR MANUFACTURER'S SPECIFICATIONS.

1. ALL ITEMS ABOVE ARE MANUFACTURED IN ACCORDANCE WITH THE MATERIAL AND PROCESSING SPECIFICATIONS OF THIS ORDER. WE ALSO CERTIFY THAT THESE PARTS HAVE NOT COME IN CONTACT WITH MERCURY WHILE IN OUR POSSESSION.
2. THE GOODS COVERED BY THIS INVOICE WERE PRODUCED IN COMPLIANCE WITH ALL APPLICABLE REQUIREMENTS OF THE FAIR LABOR STANDARD ACTS OF 1938, AS AMENDED. ALL CLAIMS FOR ERRORS OR SHORTAGES MUST BE MADE WITHIN 10 DAYS AFTER RECEIPT OF GOODS. NO GOODS TO BE RETURNED WITHOUT WRITTEN AUTHORIZATION. ALL CLAIMS FOR DEFECTIVE MATERIAL MUST BE FILED WITHIN 30 DAYS OF SHIPMENT TO RECEIVE CONSIDERATION. WE DO NOT ASSUME FINANCIAL RESPONSIBILITY FOR LIABILITY FROM THE USE OF PRODUCTS SOLD, OTHER THAN REPLACEMENT VALUE OF THE PRODUCTS SOLD, IF CLAIMED WITHIN THE SPECIFIED TIME LIMIT ABOVE.
3. PARTS ARE TO BE CONSIDERED ITAR EXEMPT OR DUAL PURPOSE UNLESS OTHERWISE STATED.

BY



DARIN MOELLER, QUALITY

RECEIVED IN  
GOOD CONDITION BY  
DATE

7/21/14

PACKED BY

SG

BAGS

CARTONS

7

GROSS WT.

251

MOELLER MANUFACTURING. &amp; SUPPLY, INC. • 805 EAST CERRITOS • ANAHEIM, CA 92805 • U.S.A.

NOTICE OF SHIPMENT/  
PACKING LIST



CERTIFICATE OF TEST

AL 8188-4 1211

|  |  |                         |  |                       |                                |                                 |                          |
|--|--|-------------------------|--|-----------------------|--------------------------------|---------------------------------|--------------------------|
| CUST. ORD. NO. & DATE<br>14811 07/26/13  |  | CUST. CODE<br>152347    | ACCEPTING MILL<br>VANDERGRIFT, PA  | SHIPPER NO.<br>593772 | PRODUCT CODE<br>13020103060000 | MILL ORDER NUMBER<br>30-073-653 | DATE SHIPPED<br>09/17/13 |
| FORMS DISTRIBUTION<br>SOLD TO: 1 PC  |  | REPEAT ORDER<br>93120-0 | DO DATE ORIGIN<br>38   | GOVT CONTRACT         | MATL<br>1141 VANDERGRIFT       | SHIPPING LOCATION<br>PA         | INVOICE<br>654602        |
| SOLD TO<br>ARROW THOMPSON METALS INC<br>6880 TROOST AVENUE<br>NORTH HOLLYWOOD CA 91605 |  | PRIME SEC.<br>DSO 402   | SHIP TO<br>ARROW THOMPSON METALS<br>6880 TROOST AVENUE<br>NORTH HOLLYWOOD CA 91605 |                       |                                |                                 |                          |

GRADE AND SPECIFICATIONS  
"ATI 321" STAINLESS STEEL SHEET C R COILS ANNEALED 2D FIN 3 EDGE (AMS 55103) (PWA 300 REV BK) (F-14, F-17, F-22, F-23, F-MASTER) (CONTROLLED TO PWA LCS REQUIREMENTS) (ASME-SA-240 ED 2010) (ASTM-A-240-13) (S-1000 DATED 11/01/2012) (S-400 DTD 10/10/2011)

CARRIER - CMI FREIGHT TRANS, INC.

| ITEM                         | PCS | DIMENSIONS W/G/L | HEAT # | COIL #     | TEST #  | GROSS | TARE | NET   | THEO | TAG #/ | CD | SKID # |
|------------------------------|-----|------------------|--------|------------|---------|-------|------|-------|------|--------|----|--------|
| 001B                         | 1   | 48./063/1077.    | 840987 | 07313N011A | 8809913 | 11505 | 50   | 11455 |      | 268327 |    |        |
|                              | 1   | 48./063/919.     | 840987 | 07313N011B | 8809913 | 10225 | 50   | 10175 |      | 268326 |    |        |
| C CUST IDENTITY 3212D.063X48 |     |                  |        |            |         |       |      |       |      |        |    |        |
| 2 SKIDS                      |     |                  |        |            |         | 21730 | 100  | 21630 |      |        |    |        |

| TYPE HEAT/TEST (WT %) | --C-- | --MN-- | --P-- | --S-- | --SI-- | --CR-- | --NI-- | --MO-- | --CU-- | --TI-- | --N-- |
|-----------------------|-------|--------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| HEAT 840987           | .01   | 1.81   | .030  | .0001 | .51    | 17.09  | 9.11   | .41    | .40    | .13    | .01   |
| TEST LOCATION         | BN    | BN     | BN    | BN    | BN     | BN     | BN     | BN     | BN     | BN     | BN    |
| CHECK 8809913         | .02   | 1.83   | .030  | .0002 | .52    | 17.16  | 9.18   | .41    | .39    | .13    | .01   |
| TEST LOCATION         | TC    | TC     | TC    | TC    | TC     | TC     | TC     | TC     | TC     | TC     | TC    |

| ITEM TEST NO  | YIELD                        | TENSILE | % ELONG | PSI * | PSI | IN 2" | % R/A | HARDNESS | BEND    | A 262  | PR E | SIZE | HARDENABILITY |
|---------------|------------------------------|---------|---------|-------|-----|-------|-------|----------|---------|--------|------|------|---------------|
| 001B 8809913  |                              |         |         |       |     |       |       | NR       | 72.HRBW | T PASS | PASS | NR   | NR            |
| TEST LOCATION | T 32700.                     | 82500.  | 56.     | TC    | TC  | TC    |       | 71.HRBW  | TC      | TC     |      |      |               |
|               | * Y.S. BY 0.2% OFFSET METHOD |         |         |       |     |       |       |          |         |        |      |      |               |
|               | P&W E-25                     |         |         |       |     |       |       |          |         |        |      |      |               |
| ITEM TEST NO  | TRAN BEND                    |         |         |       |     |       |       |          |         |        |      |      |               |
| 001B 8809913  | 2.                           |         |         |       |     |       |       |          |         |        |      |      |               |
| TEST LOCATION | TC                           |         |         |       |     |       |       |          |         |        |      |      |               |

PAGE 01 - CONTINUED ON PAGE 02

09/17/13 14:55:57

CONTRACTS - Please Note - This contract was entered into in order to first class condition, being properly bonded, at which time the responsibility for loss or damage is assumed by the carrier. For your protection please examine statement of condition. If any shortage or damage is discovered, have a full description made by transportation agent conveyed before signing.

Material Safety Data Sheets for this product have been supplied to your Purchasing Department. For an additional copy phone 724-228-5950. CAUTION: Processing heat treated items, dust or sparks may cause lung disease. See Material Safety Data Sheets for further information.

WARNING

Les fiches d'information-sécurité de ce produit ont été fournies à votre département chargé des achats. Pour obtenir des copies supplémentaires, veuillez téléphoner au numéro suivant 724-228-5950. Attention: les traitements thermiques entraînent la production de vapeurs, poussières, ou solutions potentielles, sans cause de maladies pulmonaires. Pour plus de renseignements se référer aux fiches d'information-sécurité.

The above is a true copy of data on file. The material and test data is subject to the rules, policies and procedures of the company.

Stephen Wall - Director, Corporate Quality Assurance

B/E AER-FL

P.O. OX ML 49  
P.N. M 89321-09  
REV. NLC LOT # 1029  
MOELLER MFG. & SUPPLY, INC.  
805 E. CERRITOS  
ANAHEIM, CA 92805

6/4/14

NOTICE OF SHIPMENT/  
PACKING LIST



CERTIFICATE OF TEST

AL 6158-4 1211

|                           |  |                 |                 |             |                          |                   |              |
|---------------------------|--|-----------------|-----------------|-------------|--------------------------|-------------------|--------------|
| CUST. ORG. NO. & DATE     |  | CUST. CODE      | ACCEPTING M/L   | SHIPPER NO. | PRODUCT CODE             | INLT ORDER NUMBER | DATE SHIPPED |
| 14811                     |  | 07/26/13 152347 | VANDERGRIPT, PA | 593772      | 13020103060000           | 30-073-653        | 09/17/13     |
| FORMS DISTRIBUTION        |  | REPEAT ORDER    | DO RATE         | PR. ORTY    | MATL.                    | SHIPPING LOCATION | INVOICE      |
| SOLD TO                   |  | 93120-0         | 38              |             | 1141 VANDERGRIPT         | PA                | 654602       |
| ARROW THOMPSON METALS INC |  | PRIME SEC.      | DSO             | DSO         | SHIP TO                  |                   |              |
| 6880 TROOST AVENUE        |  | 402             | 28              |             | ARROW THOMPSON METALS    |                   |              |
| NORTH HOLLYWOOD CA 91605  |  |                 |                 |             | 6880 TROOST AVENUE       |                   |              |
|                           |  |                 |                 |             | NORTH HOLLYWOOD CA 91605 |                   |              |

GRADE "ATI 321" STAINLESS STEEL SHEET C R COILS ANNEALED 2D FIN 3 EDGE CARRIER - CMI FREIGHT TRANS, INC.

NR = DATA NOT REQUIRED  
GRADE VERIFICATION WAS CARRIED OUT SPECTROSCOPICALLY

DIN EN 10204:2005 - 3.1 CERTIFICATE DOES NOT INDICATE PED APPROVAL FOR THIS MATERIAL.

MATERIAL WAS SOLUTION ANNEALED AT 1900F (1038C) MINIMUM FOR A TIME COMMENSURATE WITH THICKNESS AND RAPIDLY COOLED WITH AIR AND WATER.

ATI ALLEGHENY LUDLUM DOES NOT USE MERCURY IN THE TESTING OR PRODUCTION OF ITS PRODUCTS.

WESTMORELAND MECHANICAL TESTING & RESEARCH, YOUNGSTOWN, PA (T7869) IS A GEAE S400 AND ISO/IEC 17025 APPROVED FACILITY.

THIS DIN EN 10204:2005 - 3.1 CERTIFICATE OF TEST SHALL NOT BE REPRODUCED EXCEPT IN FULL. FEDERAL LAW PROHIBITS THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THE CERTIFICATE AND MAY BE PUNISHABLE AS A FELONY UNDER FEDERAL LAW. ATI AL HOLDS SEVERAL QUALITY CERTIFICATIONS THAT INCLUDE ISO-9001, AS9100, NADCAP, AND ISO/IEC 17025. MATERIAL WAS MANUFACTURED IN ACCORDANCE WITH THE ATI AL QUALITY MANUAL REVISION 22 DATED 7/10/2013.

B/E AEP-FL  
P.O. OX M L 49  
P.N. M 9321-09  
REV. N/C LOT # 1029  
MOELLER MFG. & SUPPLY, INC.  
805 E. CERRITOS  
ANAHEIM, CA 92805  
6/4/14



CONSIGNMENT - Please Note - This consignment was loaded over in carrier in that close condition, being properly loaded, at which time our responsibility for loss or damage is terminated. For your protection please examine shipment as it arrives. If any shortage or damage is discovered, file a full description made by transportation agent on receipt before signing.

Material Safety Data Sheets for this product have been supplied to your Purchasing Department. For an additional copy please call 724-228-5590. CAUTION: Processing this material involves high temperatures and may cause lung disease. See Material Safety Data Sheets for further information.

LES fiches d'information-sécurité de ce produit ont été fournies à votre département chargé des achats. Pour obtenir des copies supplémentaires veuillez téléphoner au numéro suivant: 724-228-5590. Attention: les traitements entraînent la production de vapeurs, poussières, ou solutions corrosives, des cas de maladies pulmonaires. Pour plus de renseignements se référer aux fiches d'information-sécurité.

The above is a true copy of data on file. The material and test results conform to the data covered and represented as set forth in Allegheny Ludlum's Order Acknowledgment.

Stephen Wolf -  
Director, Corporate Quality Assurance

NOTICE OF SHIPMENT/  
PACKING LIST



CERTIFICATE OF TEST

AL 6168-4 1211

|                           |                 |                 |             |                       |                   |              |
|---------------------------|-----------------|-----------------|-------------|-----------------------|-------------------|--------------|
| CUST. ORD. NO. & DATE     | CUST. CODE      | ACCEPTING MFG.  | SHIPPER NO. | PRODUCT CODE          | MILL ORDER NUMBER | DATE SHIPPED |
| 14911                     | 07/26/13 152347 | VANDERGRIFT, PA | 593772      | 13020103060000        | 30-073-653        | 09/17/13     |
| FORMS DISTRIBUTION        |                 | GOVT CONTRACT   |             | MATL                  | SHIPPING LOCATION | INVOICE      |
| 1                         | 93120-0 38      | PRIME SEC.      |             | 1141 VANDERGRIFT      | PA                | 654602       |
| SOLD TO                   |                 | DSO             |             | SHIP TO               |                   |              |
| ARROW THOMPSON METALS INC |                 | DSO             |             | ARROW THOMPSON METALS |                   |              |
| 6880 TROOST AVENUE        |                 | 402 28          |             | 6880 TROOST AVENUE    |                   |              |
| NORTH HOLLYWOOD           | CA 91605        |                 |             | NORTH HOLLYWOOD       | CA 91605          |              |

GRADE "ATI 321" STAINLESS STEEL SHEET C R COILS ANNEALED 2D FIN 3 EDGE CARRIER - CMI FREIGHT TRANS, INC.

ATI ALLEGHENY LUDLUM PERFORMS CHEMICAL ANALYSIS BY THE FOLLOWING TECHNIQUES:  
C, S BY COMBUSTION/INFRARED  
N, O, H BY INERT FUSION/THERMAL CONDUCTIVITY  
MN, P, SI, CR, NI, MO, CU, CB, CO, V BY WDXRF  
B BY OES  
AL AND TI (>=0.10%) BY WDXRF, OTHERWISE BY OES  
PB, BI, AG BY GFAA

MATERIAL TESTED AT ATI ALLEGHENY LUDLUM GEAR S400 APPROVED FACILITIES (T1225 & T9317):  
NATRONA HEIGHTS, PA TECHNICAL CENTER; BRACKENRIDGE, PA AND NEW BEDFORD, MA.

ATI ALLEGHENY LUDLUM HOLDS SEVERAL QUALITY AND LABORATORY CERTIFICATIONS THAT INCLUDE ISO-9001, AS9100 AD 2000-MERKBLATT WO, EU PRESSURE EQUIPMENT DIRECTIVE 97/23/EC, NADCAP, ISO/IEC 17025, GEAR S400, GEAR S-1000. REFER TO WWW.ALLEGHENYLUDLUM.COM TO ACCESS THE CURRENT ATI AL QUALITY CERTIFICATIONS.

TESTING WAS PERFORMED AT THE FOLLOWING LOCATIONS:  
BN = ATI-ALLEGHENY LUDLUM; 100 RIVER ROAD; BRACKENRIDGE, PA 15014  
TC = ATI-ALLEGHENY LUDLUM; 1300 PACIFIC AVENUE; NATRONA HEIGHTS, PA 15065

FOR ACCESS TO ONLINE CERTIFICATES OF TEST  
REGISTER AT WWW.ALCEXTRA.COM

ARROW THOMPSON METALS, INC.  
SOLD BY: MOELLER MFG.  
DATE: 10/15/2013 FOR 117617  
SIZE: .063 X 3.000 X COIL 1321 ANN  
QTY: 30 COILS 202808  
TEST REPORT: Edge Swell

PAGE 03 - FINAL PAGE.

09/17/13 14:55:57

CONSIGNMENT: Please Note-The consignee was turned over to carrier in full clear condition. Safety covers/labels at which time our responsibility for loss or damage is terminated. For your information please advise us if any damage is discovered. If any damage is discovered, have a full description made by transportation agent on waybill before signing.

Material Safety Data Sheets for this product have been supplied to your Purchasing Department. For an additional copy please 724-228-0963. CAUTION: Processing that makes heat, acid, or caustic may cause lung disease. Use Material Safety Data Sheets for further information.

WARNING: Les fiches d'information-sécurité de ce produit ont été fournies à votre département chargé des achats. Pour obtenir des copies supplémentaires veuillez téléphoner au numéro suivant 724-228-0963. Attention: Les traitements entraînant la production de vapeur, d'acidité, ou de causticité peuvent, sans cause de maladies pulmonaires. Pour plus de renseignements se référer aux fiches d'information-sécurité.

The above is a true copy of data on file. The material and test results shown in the label comply with (specification) as set forth in the Material Safety Data Sheet. Stephen Wolf - Director, Corporate Quality Assurance

B/E AER-FL

P.O. OX ML 49  
P.N. M 9321-09  
REV. N/C LOT # 1029  
MOELLER MFG. & SUPPLY, INC.  
805 E. CERRITOS  
ANAHEIM, CA 92805

6/4/14





# B/E Aerospace, Inc.

Page: 1 of 1

## CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO25711**

| LINE# | QUANTITY | U/M | PART-NUMBER   | CUST REF# | LOT-NUMBER | MANUFACTURER      | CCODE | MFR DATE | EXP DATE |
|-------|----------|-----|---------------|-----------|------------|-------------------|-------|----------|----------|
| 19    | 1000     | EA  | NAS1149D0363J |           | X8981      | ANILLO INDUSTRIES | 10630 |          |          |

  
Jason Lewis  
Vice President of Quality

09/11/14

**ANILLO Industries, Inc.**

2020 NORTH GLASSSELL STREET, ORANGE, CA 92865-3391 USA  
PLEASE REMIT TO  
P.O. BOX 5586 ORANGE, CA 92863-5586 USA  
(714)637-7000 (562)924-6632 FAX(714) 637-3022

AS9100  
HACAP CP  
ISO 9001  
CERTIFIED

**568749****Packing List &****Certification**

WE ACCEPT  
VISA/MASTER/DISCOVER/AMEX

|   |                               |              |   |                             |            |
|---|-------------------------------|--------------|---|-----------------------------|------------|
| <b>SOLD TO</b><br>B/E AEROSPACE, INC.<br>ATTN: ACCOUNTS PAYABLE DEPT.<br>10000 NW 15TH TERRACE<br><br>MIAMI, FL 33172 |                               | <b>1165</b>  | <b>SHIP TO</b><br>B/E AEROSPACE, INC.<br>CONSUMABLES MANAGEMENT<br>9835 NW 14TH ST<br><br>MIAMI, FL 33172 |                             | <b>E</b>   |
| DATE ORDER REC'D<br><b>12/07/2011</b>   | ORDER NUMBER<br><b>1A1289</b> | INVOICE DATE | SHIPPED VIA<br><b>FEDXG 033101490</b>   | TERMS<br>1% 10 DAYS, NET 30 |            |
| ITEM  | ORDERED                       | SHIPPED      | DESCRIPTION   |                             | NET WEIGHT |

1 5,635,729 *440000* **NAS1149D0363J**  
REV 5/LOT#X8981 /MIN/MAX /QCR:1,4,6,8,15,16/AN960JD10  
ECCN: 9A991 Schedule B#: 7616.10.8000 COO: USNLR

We certify that: 1. Item number 1 above is manufactured in accordance with the material and processing specifications of this order.  
2. We certify that the material on this order conforms in all respects to the current applicable government and/or manufacturer's specification. Test reports are on file and are available for examination on all Anillo manufactured parts. All claims for errors or shortages must be made within 10 days after receipt of goods.  
No good to be returned without written authorization. All claims for defective material must filed within 30 days of shipment to receive consideration. We do not assume financial responsibility or liability from the use of products sold, other than the replacement value of the products sold, if claimed within the specified time limit above.

&lt;&lt; R.M.A.# REQUIRED FOR RETURNS &gt;&gt;

&lt;&lt; TO THE BEST OF OUR KNOWLEDGE, PARTS ARE MERCURY FREE &gt;&gt;

**Certification**

B/E Aerospace, Inc.  
Consumable Management  
Self Release

Signature & Stamp: *[Signature]*Date: 6-20-14BY *[Signature]*

Ben Omidwar, Quality Assurance Manager

FI 4.03.05

# CERTIFIED INSPECTION REPORT

We hereby certify that the material covered by this certificate has been inspected with, and has been found to meet the applicable requirements described therein, including any specifications forming a part of the description and that samples representative of the material met the composition limits and had the mechanical properties shown on the face of this sheet.

This test report shall not be reproduced except in full, without the written approval of the Quality Department. No alteration, addition or other change is authorized to be made to this certificate. The recoding of false, fictitious, or otherwise fraudulent statements or entries on this certificate by any recipient may be punished as a felony under applicable law.

*Rob Woodall*

Rob Woodall  
Director of Manufacturing Davenport Works

*Terrence Thom*  
Terrence Thom  
Quality Assurance Manager

Alcoa Inc.

DAVENPORT WORKS 4879 State Street Bettendorf, IA 52722

Ship From: RIVERDALE, IA.

1501008

Ship Date

0

B.I. No.

Invoice No.

Alcoa No. Item

2013-03-22

7844426

00000

1000458296-1

DP-58296-1

P.O. No./Govt Contract No.

Customer

Alcoa Item

72266 Ln#: 01

BOEING-TMX G041003529R07

T28480

PN- 833839

RAP TO 1/18/13

Page 1 of 2

Ship To: THE BOEING COMPANY  
TMX AEROSPACE DIVISION  
12821 CARMENITA ROAD  
UNIT F  
SANTA FE SPRINGS 90670 CA

## Item Description

0.063 IN TK (+.0030 -.0030) X 48.0 IN W (+.046875 -.046875) CAT X-895699-7 (N) A/T ALCLAD 2024-T3 COILED SHEET MILL FINISH .895699-7. AMS-QQ-A-250/5 REV A IS 2010 AS9103 D6-82479 REV F ((MARKED)) LIGHTLY OILED COIL SIZES: ID 20 IN OD MAX 48 IN COIL WGT: MAX 7106 MAX GROSS SKID WGT: 7500 LB QUAN TOL +/- 35 % CQR 0108580 REV 12 CUST REQ 13-03-16 \*\*\* W/E 13-03-23 \*\*\*

| Num | Package Ticket | Lot    | Weight | Quantity | UOM | Inspector Clock Numbers |
|-----|----------------|--------|--------|----------|-----|-------------------------|
| 1   | 503970         | 319531 | 6263   | 1        | PC  | 27747 47378             |

Notes for CQR: 0108580.12

PRODUCT PRODUCED AND MARKED TO THE REQUIREMENTS OF AMS-QQ-A-250/5 ALSO MEETS THE REQUIREMENTS OF QQ-A-250/5F, AMENDM BNT 2.  
PRODUCT PRODUCED AND MARKED TO THE REQUIREMENTS OF QQ-A-250/5F, AMENDMENT 2 ALSO MEETS THE REQUIREMENTS OF AM S-QQ-A-250/5.

CQR: 0108580.12 -Specification Limits

| Temp | Dir          | UTS  | TYS  | ELAD |
|------|--------------|------|------|------|
| T3   | Long Transv. | KSI  | KSI  | PCT  |
|      | Max          |      |      |      |
|      | Min          | 61.0 | 40.0 | 15   |

## Chemical Composition

Alloy 2024

| SI  | FE   | CU   | MN  | MG   | CR  | ZN   | TI   | Other | Other |
|-----|------|------|-----|------|-----|------|------|-------|-------|
| Max | 0.50 | 0.50 | 4.9 | 0.9  | 1.8 | 0.10 | 0.25 | 0.15  | 0.05  |
| Min |      |      | 3.8 | 0.30 | 1.2 |      |      |       | 0.15  |

REMAIN

## CERTIFIED COPY OF ORIGINAL

We hereby certify that this document is a correct copy of reports now on file at Anillo Industries, Inc.

Date:

Part Number:

Lot Number:

Signature:

Title:

6-20-14  
NA5114910363J  
X8981  
*[Signature]*  
Quality Records Clerk

AN960JD10



# CERTIFIED INSPECTION REPORT

Alcoa Inc.

DAVENPORT WORKS 4879 State Street Bettendorf, IA 52722

Ship From: RIVERDALE, IA.

We hereby certify that the material covered by this certificate has been inspected with, and has been found to meet the applicable requirements described therein, including any specifications forming a part of the description and that sample representative of the material met the composition limits and had the mechanical properties shown on the face of this sheet.

This test report shall not be reproduced except in full, without the written approval of the Quality Department. No alteration, addition or other change is authorized to be made to this certificate. The recording of false, fictitious, or otherwise fraudulent statements or entries on this certificate by any recipient may be punished as a felony under applicable law.

*Rob Woodall*  
Rob Woodall  
Director of Manufacturing Davenport Works

*Terrence Thom*  
Terrence Thom  
Quality Assurance Manager

1501008 0  
Ship Date B.L. No. Invoice No. Alcoa No. Item  
2013-03-22 7844426 00000 1000458296-1 DP-58296-1  
P.O. No./Govt Contract No. Customer Alcoa Item  
TY2366 In#: 01 BOEING-TMX G041003529R07

Page 2 of 2

CQR: 0108580.12 -Specification Limits (cont.)

| Chemical Composition |  | CU    | MN   | MG   | V    | ZN   | TI   | FE+SI | Other         |
|----------------------|--|-------|------|------|------|------|------|-------|---------------|
| LINER                | Max  | 0.10  | 0.05 | 0.05 | 0.05 | 0.10 | 0.03 | 0.70  | Each Aluminum |
| Alloy 1230           | Min  |       |      |      |      |      |      |       | 0.03          |
| Lot: 319531          | - Mechanical, Physical, Metallography, Quantometer Results 99.30 |       |      |      |      |      |      |       |               |
| Temp                 | Dir  | No--> | UTS  | TYS  | EL4D |      |      |       |               |
| T3                   | Long Transv.   | Test  | KSI  | KSI  | PCT  |      |      |       |               |
|                      |  | 2     | 63.5 | 44.2 | 21.1 |      |      |       |               |
|                      |  |       | 63.6 | 44.3 | 19.6 |      |      |       |               |

| Cast Number | Chemical - OES | SI   | FE   | CU  | MN   | MG  | CR   | ZN   | TI   |
|-------------|----------------|------|------|-----|------|-----|------|------|------|
| H8048011    | Actuals        | 0.05 | 0.17 | 4.6 | 0.64 | 1.5 | 0.00 | 0.11 | 0.03 |

This material was melted in the United States or a Qualifying Country [REF DFARS 225.872.1(a)]; it was manufactured in the United States

## CERTIFIED COPY OF ORIGINAL

We hereby certify that this document is a correct copy of reports now on file at Anilio Industries, Inc.

Date:  
Part Number:  
Lot Number:

Signature:  
Title:

6-20-14  
AN9603D10  
X8981  
*[Signature]*  
Quality Records Clerk

AN9603D10

# Certification

ANILLO INDUSTRIES, INC.  
2090 North Glassell st.  
Orange, CA. 92865-3391  
(714) 637-9110

*This is to certify that the below listed parts were processed per the applicable specification listed below.*

*Test reports and procedures governing this process are on file and subject to examination.*

## CHEMICAL FILM MIL-DTL-5541

| Type | Class | Thickness | Revision |
|------|-------|-----------|----------|
| I    | 3     |           | F        |

Job Number: **X8981**      P/N REV.: **5**      Quantity: **502,890**      Visual: **Y**  
Part Number: **NA31149 D 0363 J**      Adhesion: **N**  
Description:

AN960JD10

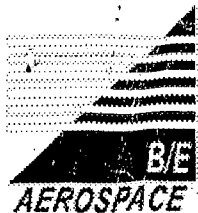
Date: **01/17/14**

Authorized by: **MARIBEL CUEVAS**

Stamp:



FORM # 4.09.117 REV A 05/19/09



# B/E Aerospace, Inc.

Page: 1 of 1

## CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172

### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO25711**

| LINE# | QUANTITY | U/M | PART-NUMBER  | CUST REF# | LOT-NUMBER | MANUFACTURER  | CCODE | MFR DATE | EXP DATE |
|-------|----------|-----|--------------|-----------|------------|---------------|-------|----------|----------|
| 16    | 500      | EA  | MS27039-0811 |           | 72030      | MAC FASTENERS | 0RPT4 |          |          |

  
Jason Lewis  
Vice President of Quality

09/11/14

MAC FASTENERS, INC.  
1110 ENTERPRISE  
OTTAWA, KANSAS 66067

**CERTIFICATE OF CONFORMANCE  
AND  
MANUFACTURER'S AFFIDAVIT**

CUSTOMER: - B/E AEROSPACE

PO: 0WSF15

PART NUMBER: MS27039-08-11

REV: 4

LOT NUMBER: 72030

MANUFACTURED QUANTITY: 102,778

MILL HEAT NUMBER: 8172051

COUNTRY OF ORIGIN: UNITED STATES OF AMERICA

DFARS 252.225.7009 Compliant

**MERCURY FREE CERTIFICATION**

MacFasteners certifies that the parts referenced in the above lot number do not contain Mercury or Mercury compounds, and were manufactured in a Mercury free environment.

We certify that the parts furnished against the above referenced purchase order were manufactured by MAC FASTENERS within the United States, and were processed in accordance with all applicable drawings and specifications. Objective evidence of compliance is on file, subject to examination upon request.

Mac Fasteners is an AS9100C Registered Company- SAI GLOBAL - 0058029  
Mac Fasteners is a DISC QSLM approved Manufacturer - CAGE Code 0RFT4  
Mac Fasteners is an Airbus approved Supplier - 203399

DATE: 04/16/14

  
QUALITY ASSURANCE REPRESENTATIVE

MAC FASTENERS, INC.  
1110 EAST ENTERPRISE  
OTTAWA, KS 66067

## CHEMICAL & PHYSICAL TEST REPORT

|                              |                     |                         |                              |
|------------------------------|---------------------|-------------------------|------------------------------|
| CUSTOMER<br>B/E AEROSPACE    | PO NUMBER<br>OWSF15 | MFG QUANTITY<br>102,778 | DATE<br>04/16/14             |
| PART NUMBER<br>MS27039-08-11 | REV<br>4            | LOT NO<br>72030         | PROCUREMENT SPEC<br>NASM7839 |

|                       |           |            |           |  |           |           |           |                             |            |   |                       |            |    |
|-----------------------|-----------|------------|-----------|--|-----------|-----------|-----------|-----------------------------|------------|---|-----------------------|------------|----|
| MATERIAL<br>TYPE 8740 |           |            |           | MATERIAL SPECIFICATION<br>MIL-S-6049/AMS6322 |           |           |           | MILL HEAT NUMBER<br>8172051 |            |   | SUPPLIER<br>JOHNSTOWN |            |    |
| C<br>.40              | Si<br>.25 | Mn<br>.86  | P<br>.010 | S<br>.11                                     | Cu<br>.09 | Ni<br>.44 | Cr<br>.49 | Mo<br>.22                   | V<br>.003  | B | Fe                    | Al<br>.026 | Ti |
|                       | Co        | N<br>.0043 | Bi        | Pb   | Mg        | Zn        |           | Nb                          | Sn<br>.006 |   |                       | Other      |    |

### MECHANICAL TEST RESULTS - TESTING PER NASM1312

| ULTIMATE TENSILE STRENGTH<br>POUNDS |       |
|-------------------------------------|-------|
| 2,440                               | 2,390 |
| 2,370                               | 2,370 |
| 2,380                               | 2,410 |
| 2,410                               | 2,380 |
| 2,390                               | 2,390 |
| 2,360                               |       |
| 2,380                               |       |
| 2,350                               |       |
| MIN. REQ. 1,750                     |       |

| DOUBLE SHEAR STRENGTH<br>POUNDS / PSI |
|---------------------------------------|
| TOO SHORT TO TEST PER<br>NASM1312-13  |
| MIN. REQ.                             |

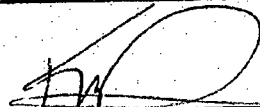
| HARDNESS                      |             |
|-------------------------------|-------------|
| ROCKWELL "C" SCALE            |             |
| REQ.                          | 26 - 32 HRC |
| SAMPLE SIZE                   | 13          |
| ACTUAL RESULTS<br>28 - 31 HRC |             |

| METALLURGICAL EXAMINATION                       |                                     |                                    |   |
|---|-------------------------------------|------------------------------------|---|
| Discontinuities                                 | <input checked="" type="checkbox"/> | Carb/Decarb                        | <input checked="" type="checkbox"/>           |
| Grain Flow                                      | <input checked="" type="checkbox"/> | Microstructure                     | <input checked="" type="checkbox"/>           |
| Grain Size                                      | <input checked="" type="checkbox"/> | Appearance                         | <input checked="" type="checkbox"/>           |
| Thread Inspection<br>FED-STD-H28/20 - ASME B1.3 |                                     | System <input type="checkbox"/> 21 | System <input checked="" type="checkbox"/> 22 |
|   |                                     |                                    | System <input type="checkbox"/> 23            |

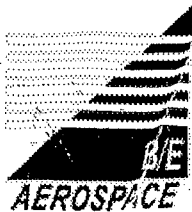
| NDT/ ADDITIONAL TESTS                            |                                     |
|--|-------------------------------------|
| Magnetic Particle Inspection per<br>ASTM E1444   | <input type="checkbox"/>            |
| Liquid Penetrant Inspection per<br>ASTM E1417    | <input type="checkbox"/>            |
| Recess Torque Test                               | <input type="checkbox"/>            |
| Head Marking                                     | <input checked="" type="checkbox"/> |
| Magnetic Permeability<br>ASTM A342 less than 2.0 | <input type="checkbox"/>            |

### TEST CERTIFICATION

WE CERTIFY THAT THE PART NUMBER, LOT NUMBER, AND SAMPLES REFERENCED  
ABOVE HAVE BEEN TESTED IN ACCORDANCE WITH THE APPLICABLE  
SPECIFICATION  
FOR THE TESTS REPORTED HEREIN. THIS CERTIFICATION SHALL NOT BE RE-  
PRODUCED, EXCEPT IN FULL, WITHOUT THE APPROVAL OF MAC FASTENERS, INC.

  
Quality Assurance Representative

AS9100C REGISTERED  
SAI GLOBAL - 0058029



# B/E Aerospace, Inc.

Page: 1 of 1

## CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172

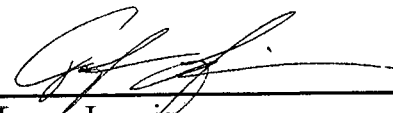
### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO25711**

| LNE# | QUANTITY | U/M | PART-NUMBER | CUST REF# | LOT-NUMBER | MANUFACTURER  | CCODE | MFR DATE | EXP DATE |
|------|----------|-----|-------------|-----------|------------|---------------|-------|----------|----------|
| 15   | 500      | EA  | MS24694-350 |           | 65120      | MAC FASTENERS | ORFT4 |          |          |

  
Jason Lewis  
Vice President of Quality

09/11/14

**MAC FASTENERS, INC.**  
**1110 ENTERPRISE**  
**OTTAWA, KANSAS 66067**

**CERTIFICATE OF CONFORMANCE  
AND  
MANUFACTURER'S AFFIDAVIT**

CUSTOMER: B/E AEROSPACE

PO: 0KTR91

PART NUMBER: MS24694-S50

REV: 2

LOT NUMBER: 65120

MANUFACTURED QUANTITY: 270,000

MILL HEAT NUMBER: 8172012

COUNTRY OF ORIGIN: UNITED STATES OF AMERICA

DFARS 252.225.7009 Compliant

**MERCURY FREE CERTIFICATION**

MacFasteners Inc. certifies that the parts referenced in the above lot number do not contain Mercury or Mercury compounds, and were manufactured in a Mercury free environment.

We certify that the parts furnished against the above referenced purchase order were manufactured by MAC FASTENERS, INC. within the United States, and were processed in accordance with all applicable drawings and specifications.

Objective evidence of compliance is on file, subject to examination upon request.

DATE: 08/07/13

  
QUALITY ASSURANCE REPRESENTATIVE

MacFasteners, Inc. is an AS9100C Registered Company- SAI GLOBAL - 0058029

**MAC FASTENERS, INC.**  
**1110 EAST ENTERPRISE**  
**OTTAWA, KS 66067**

## CHEMICAL & PHYSICAL TEST REPORT

|                                   |                            |                                |                                     |
|-----------------------------------|----------------------------|--------------------------------|-------------------------------------|
| <b>CUSTOMER</b><br>B/E AEROSPACE  | <b>PO NUMBER</b><br>0KTR91 | <b>MFG QUANTITY</b><br>270,000 | <b>DATE</b><br>08/07/13             |
| <b>PART NUMBER</b><br>MS24694-S50 | <b>REV</b><br>2            | <b>LOT NO</b><br>65120         | <b>PROCUREMENT SPEC</b><br>NASM7839 |

| MATERIAL  |     |            |      | MATERIAL SPECIFICATION |     |     |     | MILL HEAT NUMBER |            |   | SUPPLIER  |       |    |
|-----------|-----|------------|------|------------------------|-----|-----|-----|------------------|------------|---|-----------|-------|----|
| TYPE 8740 |     |            |      | MIL-S-6049/AMS6322     |     |     |     | 8172012          |            |   | JOHNSTOWN |       |    |
| C         | Si  | Mn         | P    | S                      | Cu  | Ni  | Cr  | Mo               | V          | B | Fe        | Al    | Ti |
| .42       | .25 | .87        | .008 | .013                   | .07 | .43 | .49 | .21              | .003       |   |           | .031  |    |
|           | Co  | N<br>.0060 | Bi   | Pb                     | Mg  | Zn  |     | Nb               | Sn<br>.005 |   |           | Other |    |

### MECHANICAL TEST RESULTS - TESTING PER NASM1312

| ULTIMATE TENSILE STRENGTH<br>POUNDS |       |
|-------------------------------------|-------|
| 2,930                               | 2,920 |
| 2,930                               | 2,940 |
| 2,940                               | 2,930 |
| 2,900                               | 2,900 |
| 2,910                               | 2,910 |
| 2,910                               |       |
| 2,920                               |       |
| 2,900                               |       |
| MIN. REQ.                           | 2500  |

| DOUBLE SHEAR STRENGTH<br>POUNDS / PSI |
|---------------------------------------|
| NOT REQUIRED                          |
| MIN. REQ.                             |

| HARDNESS           |             |
|--------------------|-------------|
| ROCKWELL "C" SCALE |             |
| REQ.               | 26 - 32 HRC |
| SAMPLE SIZE        | 13          |
| ACTUAL RESULTS     |             |
| 31 - 32 HRC        |             |

| METALLURGICAL EXAMINATION                       |                                     |   |                                     |
|---|-------------------------------------|---|-------------------------------------|
| Discontinuities                                 | <input checked="" type="checkbox"/> | Carb/Decarb                                   | <input checked="" type="checkbox"/> |
| Grain Flow                                      | <input checked="" type="checkbox"/> | Microstructure                                | <input checked="" type="checkbox"/> |
| Grain Size                                      | <input checked="" type="checkbox"/> | Appearance                                    | <input checked="" type="checkbox"/> |
| Thread Inspection<br>FED-STD-H28/20 - ASME B1.3 | System <input type="checkbox"/> 21  | System <input checked="" type="checkbox"/> 22 | System <input type="checkbox"/> 23  |

| NDT/ ADDITIONAL TESTS                            |                                     |
|--|-------------------------------------|
| Magnetic Particle Inspection per<br>ASTM E1444   | <input type="checkbox"/>            |
| Liquid Penetrant Inspection per<br>ASTM E1417    | <input type="checkbox"/>            |
| Recess Torque Test                               | <input type="checkbox"/>            |
| Head Marking                                     | <input checked="" type="checkbox"/> |
| Magnetic Permeability<br>ASTM A342 less than 2.0 | <input type="checkbox"/>            |

### TEST CERTIFICATION

WE CERTIFY THAT THE PART NUMBER, LOT NUMBER, AND SAMPLES REFERENCED ABOVE HAVE BEEN TESTED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATION FOR THE TESTS REPORTED HEREIN. THIS CERTIFICATION SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE APPROVAL OF MAC FASTENERS, INC.

  
 Quality Assurance Representative

**AS9100C REGISTERED**  
**SAI GLOBAL - 0058029**



MAC FASTENERS, INC.  
1110 ENTERPRISE  
OTTAWA, KANSAS 66067

## HEAT TREAT CERTIFICATION

CUSTOMER: B/E AEROSPACE

DATE: 08/07/13

PO NUMBER: 0KTR91

MANUFACTURED QUANTITY: 270,000

PROCESSOR:

BODYCOTE MCLEAN - NADCAP ID 4464

LOT NUMBER: 65120

MATERIAL: TYPE 8740

PART NUMBER: MS24694-S50

REVISION: 2

REQUIRED HARDNESS: 26 - 32 HRC

SAMPLE SIZE: 13

HARDNESS: 31 - 32 HRC

HEAT TREAT SPECIFICATION AS APPLICABLE: MIL-H-6875/AMS-H-6875/AMS2759/AMS5853/PS-1001

Notes:

The fasteners referenced in this report have been processed, inspected and certified by the Heat Treat Contractor in accordance with all applicable drawings and specifications. Heat Treatment has been verified in accordance with procurement specification and part drawing, by metallurgical and mechanical testing as applicable. Evidence of compliance as well as certification from the Heat Treat Contractor is on file and subject to examination upon request.

  
\_\_\_\_\_  
QUALITY ASSURANCE REPRESENTATIVE

MacFasteners, Inc. is an AS9100C Registered Company - SAI GLOBAL - 0058029

# **DE TRAY**

## **Plating Works**

**Specialized Electro-Plating and Polishing**  
*Nickel*  
*Copper*  
*Decorative Chrome*  
*Satin Chrome*  
*Zinc*  
*Cadmium*  
*Passivate*  
*Bright Dip*  
*Strip Copper*  
*Descale*

**10405 EAST ELEVENTH STREET • INDEPENDENCE, MISSOURI 64052**  
Phone (816) 252-8411 Fax (816) 252-8527 • E-mail : DeTrayPlating@aol.com

August 5, 2013

Mac Fasteners  
1110 East Enterprise Street  
Ottawa, Kansas 66067

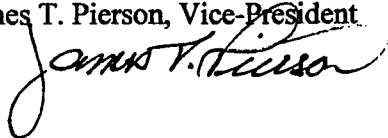
Subject: Certification

This is to certify that the following parts have been cadmium plate per QQ-P-416/AMS-QQ-P-416/NAS4160/AMS2400, Type II, Class 3. Please reference our Invoice#171866 dated 8/05/2013 for:

Lot#- 65120

P.N.- MS24694S50

James T. Pierson, Vice-President



DE TRAY PLATING WORKS

Please Visit our Web Site : [DeTrayPlating.com](http://DeTrayPlating.com)



# Johnstown Wire Technologies

124 Laurel Ave,  
Johnstown, PA 15906

Phone: 814-532-5680  
Fax: 814-532-5684

WORK ORDER  
688598

## TEST REPORT

LOT NUMBER

K-8172012

SALES ORDER / RLS

001324 / 3

SOLD TO

Mac Fasteners, Inc.  
C/O TD Logistics Inc.  
14505 W 100th Street  
Lenexa, KS 66215  
USA



|  |                         |                          |              |                       |                             |
|--|-------------------------|--------------------------|--------------|-----------------------|-----------------------------|
| CUSTOMER P.O.<br>50516   | CUSTOMER PART           | QUANTITY<br>19,648 LBS   | COILS<br>10  | LADING NO<br>00117188 | SHIPMENT DATE<br>05/03/2013 |
| <b>SPECIFICATION MacFast-87186</b><br><b>AMS2301; AMS6322; AMS-S-6049A; MIL-S-6049A 8740 DFARS Defense Federal Acquisition Regulation</b><br><b>Supplement Silicon Killed Fine Grain Aircraft Quality/Cold Heading Quality Drawn From Annealed Rod</b><br><b>Spheroidize Annealed In Process Heavy Phos &amp; Light Lube Ctd</b><br><b>Size: .1865 +.001 -.000</b> |                         |                          |              |                       |                             |
| <b>CERTIFICATION REQUIREMENTS</b>  |                         |                          |              |                       |                             |
| <b>Chemical</b>  |                         |                          |              |                       |                             |
| C<br>.42   | Mn<br>.87               | P<br>.008                | S<br>.013    | Si<br>.25             | Al<br>.031                  |
| Ni<br>.43  | Cr<br>.49               | Mo<br>.21                | Cu<br>.07    | V<br>.003             |                             |
| Ca<br>.001   | Ti<br>???????           | N<br>.0060               | Sn<br>.005   |                       |                             |
| <b>Physical</b>  |                         |                          |              |                       |                             |
| AMS 2301<br>0000   | J1<br>57                | J10<br>37                | J11<br>35    | J12<br>34             | J2<br>56                    |
|  |                         |                          |              |                       | J3<br>55                    |
|  |                         |                          |              |                       | J5<br>53                    |
|  |                         |                          |              |                       | J4<br>55                    |
|  |                         |                          |              |                       | J6<br>50                    |
|  |                         |                          |              |                       | J7<br>46                    |
|  |                         |                          |              |                       | J8<br>42                    |
|  |                         |                          |              |                       | J9<br>39                    |
| MacroClean E-381<br>111  |                         |                          |              |                       |                             |
| <b>Mechanical</b>  |                         |                          |              |                       |                             |
| <b>TEST</b>  | <b>UNITS</b>            | <b>HIGH</b>              | <b>LOW</b>   | <b>AVERAGE</b>        |                             |
| Tensile Str  | Lbs/SqIn                | 84000                    | 80000        | 82000                 |                             |
| RA Per Cent  | Percent                 | 76.9                     | 70.3         | 73.4                  |                             |
| Decarb FFD   | Inches                  | .000                     | .000         | .000                  |                             |
| Surface def. depth   | Inches                  | .001                     | .001         | .001                  |                             |
| <b>Rod / Melt Source</b>   |                         |                          |              |                       |                             |
| Rod Source<br>Republic   | Melt Source<br>Republic | Country of Origin<br>USA | Nafta<br>Yes |                       |                             |
| End of Certification   |                         |                          |              |                       |                             |

I certify that the results are a true and correct copy of the records prepared and maintained by JOHNSTOWN WIRE TECHNOLOGIES in compliance with the requirements of the cited specification. Chemistry is as reported by the rod / bar supplier and is not in JWT A2LA accreditation. This test report cannot be reproduced or distributed except in full without the written permission of JOHNSTOWN WIRE TECHNOLOGIES. The test results certified herein relate only to the items tested.

*Daniel J. Mallik*  
Daniel J. Mallik Director of Quality Assurance



1801 EAST 28TH ST.  
PHOENIX, AZ 85001

LOUISVILLE, OH 40055  
FAX: 330-438-4695

CERTIFICATE OF TESTS

REPUBLIC STEEL

2/27/2013  
2:38:00 PM  
PAGE 1 OF 2

PURCHASE ORD: 83625  
PART NUMBER: FXT40AA-.3125  
ORDER NUMBER: 1539858 - 01  
HEAT: 8172012

PURCHASE ORDER DATE: 12/21/2012  
ACCOUNT NUMBER: 5672-1920-01  
SCHEDULE: 0354-93  
REVISION: 1

CHARGE ADDRESS SHIP TO

JOHNSTOWN WIRE TECHNOLOGIES  
124 LAUREL AVE  
JOHNSTOWN, PA 15906

JOHNSTOWN WIRE TECHNOLOGIES  
EDWARD ZAPOLA  
124 LAUREL AVE  
TRUCK STOP 9 ROD DOCK  
JOHNSTOWN, PA 15904

MATERIAL DESCRIPTION  
HOT ROLLER STEEL, COILS ALLOY AMS 2301K JOHNSTOWN WIRE SPEC RW-100 REVISION DTD 04/21/04 EXC PARA  
10.3 AMS 6322N EXC HARD JOHNSTOWN WIRE SPEC RW-005 REVISION DTD 12/31/00 EXC SURFACE DEFECTS  
JOHNSTOWN WIRE SPEC PART NO. FXT40AA REVISION DTD 12/31/00 MTL S 6049A & AMD 1 COND B-1 EXC MARK &  
UT WAIVED EF-AISI-8740-H FINE GRAIN VACUUM DEGAUSED AIRCRAFT QUALITY FIXED PRACTICE QUALITY  
RESTRICTED CHEMISTRY RESTRICTED MAX INCIDENTAL ELEMENTS  
SIZE: RDS .3125 DIAM X COIL  
RDS 7.9375MM DIAM X COIL

|       |      |       | LADLE CHEMISTRY % |        |       |        |      |  |
|-------|------|-------|-------------------|--------|-------|--------|------|--|
| C     | MN   | P     | S                 | SI     | CU    | NI     | CR   |  |
| 0.42  | 0.87 | 0.008 | 0.013             | 0.25   | 0.07  | 0.43   | 0.49 |  |
| V     | MO   | SN    | AL                | B      | CB    | N      |      |  |
| 0.003 | 0.21 | 0.005 | 0.031             | 0.0000 | 0.001 | 0.0060 |      |  |

REDUCTION RATIO 1,690.4 TO 1

AUSTENITIC GRAIN SIZE 5 OR FINER BASED ON A TOTAL ALUMINUM CONTENT EQUAL TO OR GREATER THAN .020% PER ASTM A29.

SEMI - FINISHED RESULTS

JOINTLY HARDNESS TEST SAE J406/ASTM A255  
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 18 20 22 24 26 28 30 32  
57 56 55 55 53 50 46 42 39 37 35 34 33 32 31 31 30 29 29 28 27 28 27 27

MACRO ETCH TEST ASTM E381/MIL STD 430  
ETCHANT: HCL TEMPERATURE: 170  
S R C  
AVG 1 1 1

MAGNETIC PARTICLE TEST AMS 2301 AMS2304 AMS2300  
IND AVG IND AVG  
FREQ FREQ SEV SEV  
PCE 03 0 0 0 0

FINISHED SIZE RESULTS  
DECARBURIZATION TEST SAE J419/ASTM E1077/JIS G0558  
ETCHANT = NITAL MAGNIFICATION = 100X

SPIKE COMPLETE TOTAL  
INCHES INCHES DEPTH  
PCE 2394 0.002 0 0.002

G. KRUTH BY DEBORAH STOKES  
DIRECTOR QUALITY ASSURANCE

*M T Kruth*



CERTIFICATE OF TESTS

1801 EAST 26TH ST.  
PHONE: 330-498-2280

REPUBLIC STEEL

LORAIN, OH 44055  
FAX: 330-498-5496

2/27/2013  
2:38:00 PM  
PAGE 2 OF 2

=====

PURCHASE ORD: 83625  
PART NUMBER: FXT40AA-.3125  
ORDER NUMBER: 1539850 - 01  
HEAT: 8172012

=====

PURCHASE ORDER DATE: 12/21/2012  
ACCOUNT NUMBER: 5672-1920-01  
SCHEDULE: 0354-93  
REVISION: 1

CAPABLE OF SHAM DRPTH 14 MAX DIAMETER NOT LESS THAN .005 MAX

----- NOTES -----  
CHEMICAL ANALYSIS CONFORMS TO APPLICABLE SPECS: ASTM E415, LBL10129, LBL10130, ASTM E1019,  
LBL10158, LBL10114, AND ASTM E1085, LBL10184, LBL10188.

REPUBLIC STEEL HEREBY CERTIFIES THAT THE MATERIAL LISTED HEREIN HAS BEEN INSPECTED AND TESTED IN

----- NOTES (CONTINUED) -----  
ACCORDANCE WITH THE METHODS PRESCRIBED IN THE GOVERNING SPECIFICATIONS AND BASED UPON THE RESULTS OF  
SUCH INSPECTION AND TESTING HAS BEEN APPROVED FOR CONFORMANCE TO THE SPECIFICATIONS.

CERTIFICATE OF TESTS SHALL NOT BE REPRODUCED EXCEPT IN FULL.

ALL TESTING HAS BEEN PERFORMED USING THE CURRENT REVISION OF THE TESTING SPECIFICATIONS.

RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED  
AS A FELONY UNDER FED STATUTES TITLE 18 CHAPTER 47.

THE MATERIAL WAS NOT EXPOSED TO MERCURY OR ANY METAL ALLOY THAT IS LIQUID AT AMBIENT TEMPERATURE  
DURING PROCESSING OR WHILE IN OUR POSSESSION.

NO WELD OR WELD REPAIR WAS PERFORMED ON THIS MATERIAL.

THE RESULTS REPORTED RELATE ONLY TO THE ITEMS TESTED.

----- SOURCE INFORMATION -----  
MELT SOURCE: CANTON CAST ROLL MELT COUNTRY: U.S.A HOT ROLL SOURCE: LORAIN 9/10, U.S.A  
MELT METHOD: EF BLOOM RED. RATIO: 1690.4

----- END OF DATA ----- CC ----- END OF DATA -----  
WITH SHIPMENT 1 COPY PRINTED AT SHIPPING AREA  
FAX SHIP TO 1 COPY ATTENTION EDWARD ZAPOLA 1-814-532-5684  
FILE 1 COPY

G. KRUTH  
DIRECTOR QUALITY ASSURANCE

BY DEBORAH STOKES



# B/E Aerospace, Inc.

Page: 1 of 1

## CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO25711**

| LINE# | QUANTITY | U/M | PART-NUMBER | CUST REF# | LOT-NUMBER | MANUFACTURER | CCODE | MFR DATE | EXP DATE |
|-------|----------|-----|-------------|-----------|------------|--------------|-------|----------|----------|
| 21    | 6        | EA  | NAS509-4C   |           | 5772       | LONG LOK     | 03038 |          |          |

  
Jason Lewis  
Vice President of Quality

09/11/14

# Long-Lok FASTENERS

☒ Berric Screw Products  
20531 Belshaw Ave.  
Carson, California 90746  
Phone: (818) 767-1535  
Fax: (818) 767-0439

☐ 10630 Chester Rd.  
Cincinnati, Ohio 45215  
Phone: (513) 772-1880  
Fax: (513) 772-1888

☐ 20501 S. Belshaw Ave.  
Carson, California 90746  
Phone: (424) 213-4570  
Fax: (424) 213-4584

☐ A&W Screw Machine  
20531 Belshaw Avenue  
Carson, California 90746  
Phone: (818) 767-1535  
Fax: (818) 767-0439

## CERTIFICATE OF CONFORMANCE

Purchase Order No.: OTSJ87 Long-Lok S/O (Job) No.: BR3910

Customer: B/E AEROSPACE Part No.: NAS509-4C REV 7

Long-Lok Part Number: N/A

Part Description: 1/4-28 UNJF-3A HEX NUT A286

DPAS Rating: N/A Contract Number: N/A

Line Item (per P.O) #: 1 Lot #: 5772

Site Specific Code #: 40630 Heat #: 970064-1

L.T.A. #: N/A

Purchase: ☒ Material purchased for this order is in compliance with DFAR 252.225-7009, 7014 as per the applicable purchase order. ☐ DFAR's Material Not Applicable

Process: ☐ Long-Lok Strip (Nylon: Type 'L') ☐ Dri Loc  
☐ Long-Lok Strip (Kel-F: Type 'L') ☐ Dyna Thred  
☐ Poly-Lok Patch (Type 'P') ☐ Omni-Lok  
☒ Non-Locking ☐ T-Sert  
☐ Other ☐ Hot Lok  
(Ex: Pellet Type 'N')

Basic Part: ☐ Customer Furnished ☒ Complete

Quality System Per: ISO 9001:2008; AS 9100 as revised

Drawing and/or Specification Revision:

|   |                                |                              |                              |
|---|--------------------------------|------------------------------|------------------------------|
| <input type="checkbox"/> MIL-DTL-18240 Rev. F, (Amd. 1)       | <input type="checkbox"/> L     | <input type="checkbox"/> P   | <input type="checkbox"/> N   |
| <input type="checkbox"/> MIL-F-18240 Rev. E                   | <input type="checkbox"/> L     | <input type="checkbox"/> P   | <input type="checkbox"/> N   |
| <input type="checkbox"/> MIL-F-18240 Rev. D, (Amd. 1)         | <input type="checkbox"/> L     | <input type="checkbox"/> P   | <input type="checkbox"/> N   |
| <input type="checkbox"/> NAS 1283:                            | <input type="checkbox"/> L     | <input type="checkbox"/> P   |                              |
| <input type="checkbox"/> NASM 25027                           | Rev.: <input type="checkbox"/> |                              |                              |
| <input type="checkbox"/> IFI: <input type="checkbox"/> 124    | <input type="checkbox"/> 125   | <input type="checkbox"/> 524 | <input type="checkbox"/> 525 |
| <input type="checkbox"/> MIL-F-8961: <input type="checkbox"/> |                                |                              |                              |

☒ Print #: NAS509 Rev.: 7

☐ Other: RELEASE # 38QH0TSJ87

Sampling Plan:

|  |   |
|--|---|
| <input type="checkbox"/> Long-Lok Sample Plan<br>(MIL-DTL-18240) | <input type="checkbox"/> SPOC 128                 |
| <input checked="" type="checkbox"/> ANSI/ASQC Z1.4-1993          | <input checked="" type="checkbox"/> 1.0 AQL Lvl I |
| <input type="checkbox"/> 100% Inspected                          | <input type="checkbox"/> 0.65 AQL Lvl II          |
| <input type="checkbox"/> Other                                   | <input type="checkbox"/> 0.40 AQL Lvl III         |

Quantity: 3,560 Quantity Inspected: 50

The material comprising this purchase order has been subjected to, and passed, all examinations and test required by the contract, and the material meets the drawing specification and/or other requirements specifically stated in the purchase order. Test reports covering this material are on file subject to examination. All parts are processed "Mercury Free".

Manufacturing Country of Origin: USA

Name: Jessica Reyes Title: Q.A. SUPERVISOR Date: 6/30/2014



Element Materials Technology  
15062 Bolsa Chica  
Huntington Beach, CA  
92649-1023 USA

P 714 892 1961  
F 714 892 8159  
T 888 786 7555  
info.hb@element.com  
element.com

Contact: Julia B.  
Long-Lok Fasteners  
20531 Belshaw Ave.  
CARSON, CA 90746-3505

### TEST CERTIFICATE — EAR-CONTROLLED DATA

Date: 6/30/2014  
Purchase Order Number: BR7984  
Work Order Number: LON001-06-25-84575-1

|                |   |
|----------------|---|
| P/N:           | NAS509-4C REV. 7  |
| S/O:           | BR3910  |
| Lot#:          | 5772  |
| Mat'l:         | A286  |
| Heat#:         | 970064-1  |
| Qty:           | 5860  |
| Specification: | NAS 509-4C REV. 7, FF-N-836 REV. E, MIL-STD-1907 REV. N/C<br>NOTICE 4 GRADE A |
| HRC:           | 34  |

### MAGNETIC PERMEABILITY ✓

|                  |    |
|------------------|----|
| Quantity Tested: | 11 |
|------------------|----|

Testing was performed in accordance with MIL-I-17214 and ASTM A 342. The samples shall be less than 2.0 Mu for a field strength of H=200 oersteds. ✓

|         |         |
|---------|---------|
| Result: | <2.0 Mu |
|---------|---------|

### NONDESTRUCTIVE TESTING

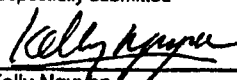
Method: Penetrant ✓  
Specification: ASTM E 1417/1417M-13 ✓  
Procedure(s): 41.10 Rev. 6 ✓  
Acceptance Criteria: MIL-STD-1907 REV. N/C ✓  
NOTICE 4 GRADE A ✓

| Item | Qty. | Description        | Method    | Qty. Conform | Qty. Reject | Insp. |
|------|------|--------------------|-----------|--------------|-------------|-------|
| 1    | 15 ✓ | NAS509-4C REV. 7 ✓ | Penetrant | 15           | 0           | P-24  |

### MATERIAL CONFORMS TO SPECIFICATION

This document contains technical data whose export and re-export/ retransfer is subject to control by the U.S. Department of Commerce under the Export Administration Act and the Export Administration Regulations. The Department of Commerce's prior written approval may be required for the export or re-export/retransfer of such technical data to any foreign person, foreign entity or foreign organization whether in the United States or abroad.

Respectfully submitted

  
Kelly Nguyen  
Senior Quality Administrator

15062 Bolsa Chica, Huntington Beach, CA 92649  
(714) 892-1961 ph • (714) 892-8159 fax www.element.com

The information contained in this certification represents only the material submitted and is certified only for the quantities tested. Reproduction except in full is reserved pending written approval. The recording of false, fictitious, or fraudulent statements or entries on the certificate may be punishable as a felony under federal law. All testing was performed in a mercury free environment. All testing performed in accordance with the latest edition of the applicable ASTM, or other Federal Test Method in effect at the time of test.





- ANODIZE I II III
- PLATING
- INSPECTION
- PAINTING

CERTIFICATION OF CONFORMANCE

6/26/2014

CERTIFICATION NO.  
264452

15547 GARFIELD AVENUE - PIRAMOUNT, CA 90723 - (562) 634-5700 - (714) 522-4481 - FAX: (562) 634-2867

SOLD TO  
LONG-LOK FASTENERS (ACCTS. PAYABLE)  
14275 MIDWAY ROAD, SUITE 140  
ADDISON, TX 75001-3651

LONG-LOK FASTENERS CARSON  
20501 S. BELSHAW AVE  
CARSON, CA 90746

|                             |                      |                       |                             |                           |
|-----------------------------|----------------------|-----------------------|-----------------------------|---------------------------|
| CUSTOMER P.O. NO.<br>BR7985 | CUSTOMER SHIPPER NO. | CUSTOMER JOB NO.      | DATE RECEIVED<br>06/25/2014 | DATE SHIPPED<br>6/26/2014 |
| CARRIER                     | CONTAINERS           | TERMS<br>2% 10 Net 30 | BUYER                       |                           |

| ITEM | QTY. ORDERED | PART NUMBER/DESCRIPTION  | QTY. SHIPPED | BALANCE DUE |
|------|--------------|--|--------------|-------------|
| 1    | 5860         | NAS509-4C Rev. 7<br>A286 PER AMS 5737<br>Order: 264452<br>*****ANAPLEX CORPORATION IS NADCAP CERTIFIED*****<br>*****HARDWARE PROCESSED IN A MERCURY FREE ENVIRONMENT*****<br>PASSIVATE PER AMS 2700 REV. E<br>METHOD: <u>1</u> TYPE: <u>II</u><br>TEST REQUIREMENTS: <u>24</u> HOUR HIGH HUMIDITY TEST<br>CLASS: <u>4</u><br>SAMPLE QTY: <u>13</u><br>ACCEPT: <u>5840</u> REJECT: <u>0</u><br>SO:BR3910<br>CUST PO:0TSJ87<br>HEAT#970064-1<br>LOT#5772<br>HRC#34 | 5860         | 0           |
|      |              |  | 5860         |             |

WE CERTIFY THAT, EXCEPT AS OTHERWISE STATED, THE LISTED PARTS HAVE BEEN PROCESSED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NOTED PURCHASE ORDER/SPECIFICATION(S). RECORDS ARE ON FILE AND AVAILABLE FOR EXAMINATION.



BY Richard Wyatt  
RICHARD WYATT

Q. C. MGR.  
TITLE

Order No.: 3402185  
Time: 04:00:12

**Fry Steel Company**  
Registered ISO 9001  
13325 MOLETTE STREET  
SANTA FE SPRINGS, CA. 90670  
(562) 802-2721

Cust. No.: B02200  
P.O.: BR4547-CHRIS

### CERTIFICATE OF COMPLIANCE

BERNIC SCREW PRODUCTS  
14275 MIDWAY RD #140  
\*\*\* BILLING ONLY \*\*\*  
ADDISON TX 75001-3651

LONG LOK FASTENERS  
20501 BELSHAW  
CARSON CA 90746

10/18/12

| QTY | DESCRIPTION  | ITEM CODE | HEAT     |
|-----|--|-----------|----------|
| 83  | CD A 286 AGED<br>AMS 5737<br>GREEN/WHITE<br><br>BARS 7/16"HEX 12'RL<br>P.I.E.<br>SHIP TOTAL STOCK 566 LBS<br>CONSIDER COMPLETE<br>PER CHRIS/VS/SL - 10/16/12 | 5530      | 970064-1 |

#### NOTICE

A COPY OF THE ORIGINAL MILL CERTIFICATION IS ATTACHED\*.

CHEMICALS & PHYSICALS ARE REPORTED THAT WILL MEET THE SPECIFICATIONS SHOWN ON THE CERTIFICATE.

EXCEPTIONS TO SPECIFICATIONS SHOULD BE SHOWN ON THE CERTIFICATION.

**AUTOMATIC EXCEPTION TO THE SPECS LISTED ARE: LINE MARKING AND INSPECTION (I.E. MAG., SONIC, ETC.)**

WE SUGGEST CONSULTING AN EXPERT ABOUT RELATED INSPECTION, PRIOR TO ALTERING THE MATERIAL FROM THE AS SHIPPED/RECEIVED CONDITION. "DEFECT FREE" MATERIAL CAN NOT BE GUARANTEED WITHOUT PRIOR INSPECTION APPROPRIATE TO APPLICATION.

NO WELD REPAIR HAS BEEN PERFORMED AND THIS MATERIAL IS FREE FROM MERCURY AND RADIIUM CONTAMINATION AT TIME OF SHIPMENT  
THE WILLFUL RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS ON THIS DOCUMENT MAY RESULT AS A FELONY UNDER FEDERAL STATUTES

\*WHEN APPLICABLE

**-TO THE BEST OF OUR KNOWLEDGE MATERIAL IS CONFLICT MINERAL FREE-**

*Chip Sandoval*  
CHIP SANDOVAL - Q.C. MANAGER

Fry Steel Company

# CERTIFICATE OF TESTS

CERT SERIAL# 000844135



## CARPENTER

Carpenter Technology Corporation  
101 West Bern Street Reading, Pa. 19601  
Tel: (610) 204-2000 / (800) 834-4592

10/08/12

CUSTOMER, BESTELLER, CLIENT

FRY STEEL COMPANY

LARRY LONG  
13325 MOLETTE ST  
SANTA FE SPRING CA 90670

GARANTIE MERKEURZEUGNIS

CERTIFICAT DE CONTROLE

- THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FEDERAL STATUTES, INCLUDING FEDERAL LAW, TITLE 18, CHAPTER 47A.
- THE VALUES AND OTHER TECHNICAL DATA REPRESENT THE RESULTS OF ANALYSES AND TESTS MADE ON SAMPLES COLLECTED FROM THE TOTAL LOT. ORIGINAL DATA RECORDS CAN BE TRACED BY REFERENCE TO THE CARPENTER ORDER NUMBER.
- MATERIAL IS MANUFACTURED FREE FROM MERCURY, RADIUM, ALPHA AND GAMMA SOURCE CONTAMINATION.
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SELLER/VERKAUFER/VENDEUR PAGE 1 OF 3

RAN

| CUSTOMER ORDER NO./BESTELLER-NR./N° DE COMMANDE | CARPENTER NO./MERKEUR-NR./N° DE REFERENCE INTERNE | DATE/DATUM/DATE | WEIGHT/GEWICHT/POIDS |
|---|---|-----------------|----------------------|
| 46958-1 S# 5530                                 | W56553  | 10/08/12        | 1566.000             |

HEAT NUMBER SCHMELZE-NR. N° DE COULEE: 970064

PRODUCT DESCRIPTION: CONSUMET A288 SOLUTION ANNEALED AGED COLD DRAWN

SPECIFICATION: AMS 5737 REV P (06/ /06) (AIM T.S. MIN 150.0 KSI/GR. SIZE FOR RECORD)

ASTM-A638-10 GRADE 660 TYPE 1  
ASTM-A453-10E1 GRADE 660 CLASS A  
GE S-400 (10/10/11)  
GE S-1000 (08/01/11)  
DEARS 1998 EDITION  
EN 2303 ED 1 (03/ /80)

SIZE 0.437500 IN. ( 11.11 MM) HEX BAR

INGOT 1

PRIMARY HEAT CHEMISTRY(WT%):

| C     | MN    | SI       | P     | S      | CR    |
|-------|-------|----------|-------|--------|-------|
| 0.04  | 0.19  | 0.12     | 0.012 | LT-001 | 14.17 |
| NI    | MO    | CU       | CO    | AL     | TI    |
| 24.90 | 1.26  | 0.05     | 0.06  | 0.18   | 2.21  |
| V     | B     | PB       |       |        |       |
| 0.25  | 0.006 | LT .0003 |       |        |       |

GEAG SUPPLIER CODE 21100/CARPENTER  
GEAG SUPPLIER CODE T4314/LATROBE SPECIALTY STEEL CO.  
GEAG SUPPLIER CODE T7869/WESTMORELAND MECHANICAL TESTING & RESEARCH, INC.

THE CHEMICAL ANALYSIS OF THIS HEAT HAS BEEN PERFORMED BY THE CARPENTER SPECIALTY ALLOYS CHEMICAL LABORATORY, (CODE NUMBER PRI 100004), WHICH WAS ACCREDITED TO THE ISO/IEC 17025.

MILL HEAT TREATMENT:

|                      |                 |               |
|----------------------|-----------------|---------------|
| TYPE                 | SOLUTION ANNEAL | AGE           |
| TEMP                 | 1650F ( 899C)   | 1328F ( 720C) |
| TIME (BATCH FURNACE) | 2.00 HOURS      | 16.00 HOURS   |
| QUENCH               | WATER           | AIR           |

HARDNESS AS SHIPPED, HRC

37

(MIDRADIUS)

GRAIN SIZE PER ASTM E112: 7 (KALLINGS)

CONTINUED ON NEXT PAGE

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970064-1

7/16 HEX

CERTIFICATE OF TESTS  
CERT SERIAL# 000844135

ABNAHMEPRUEFZEUGNIS

CERTIFICAT DE CONTROLE



**CARPENTER**

Carpenter Technology Corporation  
101 West Bern Street, Reading, Pa 19601  
Tel: (610) 204-2000 (RND) 338-4592

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10/08/12

CUSTOMER BESTELLER CLIENT

FRY STEEL COMPANY

LARRY LONG  
13325 MOLETTE ST  
SANTA FE SPRING CA 90670

SELLER VERKAUFER VENDEUR PAGE 2 OF 3

| CUSTOMER ORDER NO./BESTELL-NR./N DE COMMANDE | CARPENTER NO./WERKS-NR./N DE REFERENCE INTERNE | DATE/DATUM/DATE | WEIGHT/GEWICHT/POIDS |
|--|--|-----------------|----------------------|
| 40958-1 S# 5530                              | W56553   | 10/08/12        | 1566.000             |

HEAT NUMBER SCHMELZ-NR./NOMBRUE: 970064

(T)RANSVERSE (L)ONGITUDINAL L  
YIELD STRENGTH (0.20 %) KSI(MPA) 146.0 ( 1007)  
TENSILE STRENGTH KSI(MPA) 170.0 ( 1172)  
ELONGATION IN 1.74 % 21.0  
REDUCTION OF AREA % 39.0

\*\*\*TESTED AT WESTMORELAND MECHANICAL TESTING & RESEARCH, INC.

COMBINATION STRESS RUPTURE  
TEST TEMP 1200 F ( 649 C)  
STRESS KSI(MPA) 56.0 ( 386)  
ELONGATION % 15.7  
HOURS 143.8

AFTER MINIMUM TIME UNDER SPECIFIED STRESS, THE STRESS RUPTURE TEST WAS OVERLOADED IN INCREMENTS AS FOLLOWS:

| TOTAL HOURS | STRESS KSI(MPA) |
|-------------|-----------------|
| 100         | 61.0 ( 421)     |
| 108         | 66.0 ( 455)     |
| 116         | 71.0 ( 490)     |
| 124         | 76.0 ( 524)     |
| 132         | 81.0 ( 558)     |
| 141         | 86.0 ( 593)     |

\*\*\*TESTED AT WESTMORELAND MECHANICAL TESTING & RESEARCH, INC.

COMBINATION STRESS RUPTURE  
TEST TEMP 1200 F ( 649 C)  
STRESS KSI(MPA) 65.0 ( 448)  
ELONGATION % 21.4  
HOURS 60.8

AFTER MINIMUM TIME UNDER SPECIFIED STRESS, THE STRESS RUPTURE TEST WAS OVERLOADED IN INCREMENTS AS FOLLOWS:

| TOTAL HOURS | STRESS KSI(MPA) |
|-------------|-----------------|
| 23          | 70.0 ( 483)     |
| 33          | 75.0 ( 517)     |
| 42          | 80.0 ( 552)     |
| 51          | 85.0 ( 586)     |
| 60          | 90.0 ( 621)     |

MATERIAL HAS BEEN MELTED IN USA OR QUALIFYING COUNTRY TO DFARS REQUIREMENTS 252.225-7014 WITH ALTERNATE 1 FOR QUALIFYING COUNTRY 225.872.1, SUPERSEDED BY DFARS REQUIREMENTS DFARS 252.225-7008 AND 252.225-7009.

CONTINUED ON NEXT PAGE

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CERTIFICATE OF TESTS  
CERT SERIAL# 00084135



**CARPENTER**

Carpenter Technology Corporation  
101 West Bern Street, Reading, Pa. 19601  
Tel: (610) 208-2000 (800) 338-4592

10/08/12

CUSTOMER, BESTELLER, CLIENT

FRY STEEL COMPANY

LARRY LONG  
13325 MOLETTE ST  
SANTA FE SPRING CA 90670

ABNAHMEPRUEFEZEUGNIS

CERTIFICAT DE CONTROLE

- THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FEDERAL STATUTES INCLUDING FEDERAL LAW, TITLE 18, CHAPTER 47.
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SELLER / VERKÄUFER / VENDEUR PAGE 3 OF 3

| CUSTOMER ORDER NO. / BESTELL-NR. / N° DE COMMANDE | CARPENTER NO. / WORKS-NR. / N° DE REFERENCE INTERNE | DATE / DATUM / DATE | WEIGHT / GEWICHT / POIDS |
|---|---|---------------------|--------------------------|
| 46958-1 S# 5530                                   | W56553  | 10/08/12            | 1566.000                 |

HEAT NUMBER, SCHMELZE-NR., N° DE COULEE: 970064  
THIS ORDER WAS MANUFACTURED IN ACCORDANCE WITH CARPENTER SPECIALTY ALLOYS OPERATIONS QUALITY PROGRAM MANUAL, REVISION 30 DATED 09/28/11.

CARPENTER'S QUALITY MANAGEMENT SYSTEM WAS REGISTERED AS OF NOVEMBER 24, 2010 TO THE REQUIREMENTS OF ISO 9001:2008 APPROVAL CERTIFICATE 10-1385R BY PERFORMANCE REVIEW INSTITUTE. CERTIFICATE OF TEST IS PREPARED IN ACCORDANCE WITH PARAGRAPH 3.1 OF EN 10204 (DIN 50049). WE HEREBY CERTIFY THAT THE ABOVE TEST DATA ARE IN ACCORDANCE WITH THE PURCHASE ORDER AND SPECIFICATION REQUIREMENTS, AS DOCUMENTED IN THIS CERTIFICATE OF TESTS.

TEST METHODS ARE PER THE ASTM STANDARDS ON FILE AND IN EFFECT AT TIME OF ORDER ACCEPTANCE, STANDARD PRACTICES, OR AS AGREED UPON BETWEEN CARPENTER & CUSTOMER.

SHERRY L KREIDER  
ADMINISTRATOR - QUALITY  
CARPENTER TECHNOLOGY CORPORATION

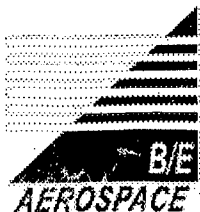
FRY STEEL CO. CERTIFIES THAT THIS IS  
A TRUE COPY OF THE ORIGINAL MILL TEST  
REPORT NOW ON FILE  
RECEIVED AND INSPECTED

OCT 09 2012

BY *Chip Sandoval*  
CHIP SANDOVAL - Q.C. MANAGER

*Sherry Kreider*

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# B/E Aerospace, Inc.

Page: 1 of 1

## CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO25711**

| LINE# | QUANTITY | U/M | PART-NUMBER | CUST REF# | LOT-NUMBER | MANUFACTURER  | CCODE | MFR DATE | EXP DATE |
|-------|----------|-----|-------------|-----------|------------|---------------|-------|----------|----------|
| 4     | 200      | EA  | AN4-15A     |           | 68551      | MAC FASTENERS | ORPT4 |          |          |

  
Jason Lewis  
Vice President of Quality

09/11/14

**MAC FASTENERS, INC.**  
**1110 ENTERPRISE**  
**OTTAWA, KANSAS 66067**

**CERTIFICATE OF CONFORMANCE  
AND  
MANUFACTURER'S AFFIDAVIT**

CUSTOMER: B/E AEROSPACE

PO: 0RBJ63

PART NUMBER: AN4-15A

REV: 3

LOT NUMBER: 68551

MANUFACTURED QUANTITY: 84,000

MILL HEAT NUMBER: 8195136

COUNTRY OF ORIGIN: UNITED STATES OF AMERICA

DFARS 252.225.7009 Compliant

**MERCURY FREE CERTIFICATION**

MacFasteners certifies that the parts referenced in the above lot number do not contain Mercury or Mercury compounds, and were manufactured in a Mercury free environment.

We certify that the parts furnished against the above referenced purchase order were manufactured by MAC FASTENERS within the United States, and were processed in accordance with all applicable drawings and specifications. Objective evidence of compliance is on file, subject to examination upon request.

Mac Fasteners is an AS9100C Registered Company- SAI GLOBAL - 0058029  
Mac Fasteners is a DISC QSLM approved Manufacturer - CAGE Code 0RFT4  
Mac Fasteners is an Airbus approved Supplier - 203399

DATE: 05/08/14

  
QUALITY ASSURANCE REPRESENTATIVE

MAC FASTENERS, INC.  
1110 EAST ENTERPRISE  
OTTAWA, KS 66067

## CHEMICAL & PHYSICAL TEST REPORT

|                           |                     |                        |                              |
|---------------------------|---------------------|------------------------|------------------------------|
| CUSTOMER<br>B/E AEROSPACE | PO NUMBER<br>0RBJ63 | MFG QUANTITY<br>84,000 | DATE<br>05/08/14             |
| PART NUMBER<br>AN4-15A    | REV<br>3            | LOT NO<br>68551        | PROCUREMENT SPEC<br>NASM6812 |

|                       |           |            |           |  |           |           |           |                             |            |   |                       |            |    |
|-----------------------|-----------|------------|-----------|--|-----------|-----------|-----------|-----------------------------|------------|---|-----------------------|------------|----|
| MATERIAL<br>TYPE 8740 |           |            |           | MATERIAL SPECIFICATION<br>MIL-S-6049/AMS6322 |           |           |           | MILL HEAT NUMBER<br>8195136 |            |   | SUPPLIER<br>JOHNSTOWN |            |    |
| C<br>.42              | Si<br>.25 | Mn<br>.87  | P<br>.010 | S<br>.012                                    | Cu<br>.07 | Ni<br>.43 | Cr<br>.50 | Mo<br>.21                   | V<br>.003  | B | Fe                    | Al<br>.027 | Ti |
|                       | Co        | N<br>.0064 | Bi        | Pb   | Mg        | Zn        |           | Nb                          | Sn<br>.004 |   |                       | Other      |    |

### MECHANICAL TEST RESULTS - TESTING PER NASM1312

| ULTIMATE TENSILE STRENGTH<br>POUNDS |       |
|-------------------------------------|-------|
| 6,020                               |       |
| 6,070                               |       |
| 6,050                               |       |
| 6,100                               |       |
| 6,080                               |       |
| MIN. REQ.                           | 4,080 |

| DOUBLE SHEAR STRENGTH<br>POUNDS / PSI |       |
|---------------------------------------|-------|
| 8,860                                 |       |
| 8,980                                 |       |
| 8,940                                 |       |
| 8,910                                 |       |
| 8,960                                 |       |
| MIN. REQ.                             | 7,360 |

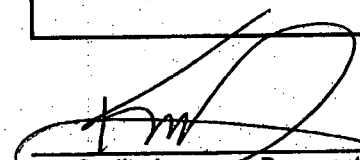
| HARDNESS                      |             |
|-------------------------------|-------------|
| ROCKWELL "C" SCALE            |             |
| REQ.                          | 26 - 32 HRC |
| SAMPLE SIZE                   | 5           |
| ACTUAL RESULTS<br>28 - 30 HRC |             |

| METALLURGICAL EXAMINATION                       |                                     |                                    |   |
|---|-------------------------------------|------------------------------------|---|
| Discontinuities                                 | <input checked="" type="checkbox"/> | Carb/Decarb                        | <input checked="" type="checkbox"/>           |
| Grain Flow                                      | <input checked="" type="checkbox"/> | Microstructure                     | <input checked="" type="checkbox"/>           |
| Grain Size                                      | <input checked="" type="checkbox"/> | Appearance                         | <input checked="" type="checkbox"/>           |
| Thread Inspection<br>FED-STD-H28/20 - ASME B1.3 |                                     | System <input type="checkbox"/> 21 | System <input checked="" type="checkbox"/> 22 |
|   |                                     |                                    | System <input type="checkbox"/> 23            |

| NDT/ ADDITIONAL TESTS                            |                                     |
|--|-------------------------------------|
| Magnetic Particle Inspection per<br>ASTM E1444   | <input checked="" type="checkbox"/> |
| Liquid Penetrant Inspection per<br>ASTM E1417    | <input type="checkbox"/>            |
| Recess Torque Test                               | <input type="checkbox"/>            |
| Head Marking                                     | <input checked="" type="checkbox"/> |
| Magnetic Permeability<br>ASTM A342 less than 2.0 | <input type="checkbox"/>            |

### TEST CERTIFICATION

WE CERTIFY THAT THE PART NUMBER, LOT NUMBER, AND SAMPLES REFERENCED ABOVE HAVE BEEN TESTED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATION FOR THE TESTS REPORTED HEREIN. THIS CERTIFICATION SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE APPROVAL OF MAC FASTENERS, INC.

  
Quality Assurance Representative

AS9100C REGISTERED  
SAI GLOBAL - 0058029



MAC FASTENERS, INC.  
1110 ENTERPRISE  
OTTAWA, KANSAS 66067

## HEAT TREAT CERTIFICATION

CUSTOMER: B/E AEROSPACE

DATE: 05/08/14

PO NUMBER: 0RBJ63

MANUFACTURED QUANTITY: 84,000

PROCESSOR:

PAULO PRODUCTS KCMO - NADCAP ID 4679

LOT NUMBER: 68551

MATERIAL: TYPE 8740

PART NUMBER: AN4-15A

REVISION: 3

REQUIRED HARDNESS: 26 - 32 HRC

SAMPLE SIZE: 5

HARDNESS: 28 - 30 HRC

HEAT TREAT SPECIFICATION AS APPLICABLE: MIL-H-6875/AMS-H-6875/AMS2759/AMS5853/PS-1001

Notes:

The fasteners referenced in this report have been processed, inspected and certified by the Heat Treat Contractor in accordance with all applicable drawings and specifications. Heat Treatment has been verified in accordance with procurement specification and part drawing, by metallurgical and mechanical testing as applicable. Evidence of compliance as well as certification from the Heat Treat Contractor is on file and subject to examination upon request.



QUALITY ASSURANCE REPRESENTATIVE

MacFasteners, Inc. is an AS9100C Registered Company - SAI GLOBAL - 0058029

# **DE TRAY**

## **Plating Works**

**Specialized Electro-Plating and Polishing**  
**Nickel**  
**Copper**  
**Decorative Chrome**  
**Satin Chrome**  
**Zinc**  
**Cadmium**  
**Passivate**  
**Bright Dip**  
**Strip Copper**  
**Descale**

**10405 EAST ELEVENTH STREET • INDEPENDENCE, MISSOURI 64052**  
**Phone (816) 252-8411 Fax (816) 252-8527 • E-mail : DeTrayPlating@Aol.com**

May 5, 2014

Mac Fasteners  
1110 East Enterprise Street  
Ottawa, Kansas 66067

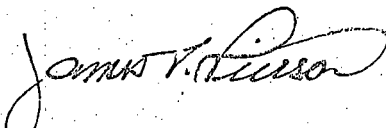
Subject: Certification

This is to certify that the following parts have been cadmium plated per QQ-P416/AMS-QQ-P-416/NAS4160/AMS2400, Type II, Class 2. Please reference our Invoice# 179319 dated 5/05/2014 for:

Lot#- 68551

P.N.- AN4-15A

James T. Pierson, Vice-President



DE TRAY PLATING WORKS

Please Visit our Web Site : [DeTrayPlating.com](http://DeTrayPlating.com)


 1807 EAST 28TH ST.  
 PHONE: 330-438-6580

 LORAIN, OH 44055  
 FAX: 330-438-6695

## CERTIFICATE OF TESTS

REPUBLIC STEEL

 1/10/2014  
 2:13:00 PM  
 PAGE 1 OF 2

 PURCHASE ORD: 85080  
 PART NUMBER: FXT40AA-.375  
 ORDER NUMBER: 1564645 - 01  
 HEAT: 8195136

 PURCHASE ORDER DATE: 8/26/2013  
 ACCOUNT NUMBER: 5672-1920-01  
 SCHEDULE: 2429-94  
 REVISION: 1

===== CHARGE ADDRESS ===== SHIP TO =====

 JOHNSTOWN WIRE TECHNOLOGIES  
 124 LAUREL AVE  
 JOHNSTOWN, PA 15906

 JOHNSTOWN WIRE TECHNOLOGIES  
 EDWARD ZAPOLJA  
 124 LAUREL AVE  
 TRUCK STPO 9 ROD DOCK  
 JOHNSTOWN, PA 15904

## ----- MATERIAL DESCRIPTION -----

 HOT ROLLED STEEL COILS ALLOY JOHNSTOWN WIRE SPEC RW-100 REVISION DTD 04/21/04 EXC PARA 10.3 AMS  
 6322N EXC HARD JOHNSTOWN WIRE SPEC PART NO. FXT40AA REVISION DTD 12/31/00 MIL S 6049A & AMD 1 COND  
 B-1 EXC MARK & UT WAIVED AMS 2301K JOHNSTOWN WIRE SPEC RW-005 REVISION DTD 12/31/00 EXC SURFACE  
 DEFECTS EF-AISI-8740-H FINE GRAIN VACUUM DEGASSED AIRCRAFT QUALITY FIXED PRACTICE QUALITY RESTRICTED  
 CHEMISTRY RESTRICTED MAX INCIDENTAL ELEMENTS  
 SIZE: RDS .3750 DIAM X COIL  
 RDS 9.5250MM DIAM X COIL

## ----- LADLE CHEMISTRY % -----

| C     | MN   | P     | S     | SI     | CU    | NI     | CR   |
|-------|------|-------|-------|--------|-------|--------|------|
| 0.42  | 0.87 | 0.010 | 0.012 | 0.25   | 0.07  | 0.43   | 0.50 |
| V     | MO   | SN    | AL    | B      | CB    | N      |      |
| 0.003 | 0.21 | 0.004 | 0.027 | 0.0000 | 0.000 | 0.0064 |      |

## ----- CALCULATED TESTS -----

REDUCTION RATIO 1,177.6 TO 1

## ----- SEMI - FINISHED RESULTS -----

 GRAIN SIZE TEST ASTM A29/ASTM E112  
 PCE H30301 MCQUAID = 7.00000

JOMINY HARDNESS TEST SAE J406/ASTM A255

 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 18 20 22 24 26 28 30 32  
 58 58 57 56 55 53 51 47 44 41 39 38 36 35 34 34 32 32 30 30 30 29 29 28

MACRO ETCH TEST ASTM E381/MIL STD 430

ETCHANT: HCL TEMPERATURE: 170

| AVG | S | R | C |
|-----|---|---|---|
| 1   | 1 | 1 | 1 |

MAGNETIC PARTICLE TEST AMS 2301 AMS2304 AMS2300

| IND    | AVG  | IND | AVG |
|--------|------|-----|-----|
| FREQ   | FREQ | SEV | SEV |
| PCE 03 | 0    | 0   | 0   |

## ----- FINISHED SIZE RESULTS -----

DECARBURIZATION TEST SAE J419/ASTM E1077/JIS G0558

ETCHANT = NITAL MAGNIFICATION = 100X

|         | SPIKE  | COMPLETE | TOTAL |
|---------|--------|----------|-------|
|         | INCHES | INCHES   | DEPTH |
| PCE 336 | 0.002  | 0        | 0.002 |

 G. KRUTH  
 DIRECTOR QUALITY ASSURANCE

BY DEBORAH STOKES

1807 EAST 28TH ST.  
PHONE: 330-438-5580LORAIN, OH 44055  
FAX: 330-438-5685

## CERTIFICATE OF TESTS

REPUBLIC STEEL

1/10/2014  
2:13:00 PM  
PAGE 2 OF 2PURCHASE ORD: 85080  
PART NUMBER: FXT40AA-.375  
ORDER NUMBER: 1564645 - 01  
HEAT: 8195136PURCHASE ORDER DATE: 8/26/2013  
ACCOUNT NUMBER: 5672-1920 01  
SCHEDULE: 2429-94  
REVISION: 1

CAPABLE OF SEAM DEPTH 1% MAX DIAMETER NOT LESS THAN .005 MAX

## NOTES

CHEMICAL ANALYSIS CONFORMS TO APPLICABLE SPECS: ASTM E415, LBL10129, LBL10130, ASTM E1019, LBL10158, LBL10114, AND ASTM E1085, LBL10184, LBL10188.

## NOTES (CONTINUED)

REPUBLIC STEEL HEREBY CERTIFIES THAT THE MATERIAL LISTED HEREIN HAS BEEN INSPECTED AND TESTED IN ACCORDANCE WITH THE METHODS PRESCRIBED IN THE GOVERNING SPECIFICATIONS AND BASED UPON THE RESULTS OF SUCH INSPECTION AND TESTING HAS BEEN APPROVED FOR CONFORMANCE TO THE SPECIFICATIONS.

CERTIFICATE OF TESTS SHALL NOT BE REPRODUCED EXCEPT IN FULL.

ALL TESTING HAS BEEN PERFORMED USING THE CURRENT REVISION OF THE TESTING SPECIFICATIONS.

RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FED STATUTES TITLE 18 CHAPTER 47.

THE MATERIAL WAS NOT EXPOSED TO MERCURY OR ANY METAL ALLOY THAT IS LIQUID AT AMBIENT TEMPERATURE DURING PROCESSING OR WHILE IN OUR POSSESSION.

NO WELD OR WELD REPAIR WAS PERFORMED ON THIS MATERIAL.

THE RESULTS REPORTED RELATE ONLY TO THE ITEMS TESTED.

THE PRODUCTS SUPPLIED BY REPUBLIC STEEL DO NOT HAVE TANTALUM, TIN, TUNGSTEN, OR GOLD (COLLECTIVELY, "CONFLICT MINERALS") ADDED DURING PRODUCTION. ANY MEASURABLE AMOUNTS OF THESE ELEMENTS CONTAINED IN OUR STEEL ARE DERIVED FROM RESIDUAL MATERIALS IN THE RECYCLED SCRAP THAT WE PURCHASE FOR ELECTRIC ARC FURNACE STEEL MAKING. THEY ARE NOT "NECESSARY TO THE FUNCTIONALITY OR PRODUCTION OF OUR STEEL."

## SOURCE INFORMATION

MELT SOURCE: CANTON CAST ROLL MELT COUNTRY: U.S.A HOT ROLL SOURCE: LORAIN 9/10, U.S.A  
MELT METHOD: EF BLOOM RED. RATIO: 1177.6

END OF DATA

CC

END OF DATA

WITH SHIPMENT 1 COPY PRINTED AT SHIPPING AREA  
FAX SHIP TO 1 COPY ATTENTION EDWARD ZAPOLA  
FILE 1 COPY

1-814-532-5684

G. KRUTH  
DIRECTOR QUALITY ASSURANCE

BY DEBORAH STOKES



# B/E Aerospace, Inc.

Page: 1 of 1

## CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO25711**

| LINE# | QUANTITY | U/M | PART-NUMBER  | CUST REF# | LOT-NUMBER       | MANUFACTURER         | CCODE | MFR DATE | EXP DATE |
|-------|----------|-----|--------------|-----------|------------------|----------------------|-------|----------|----------|
| 9     | 200      | EA  | MS20615-4M20 |           | 260620 P001 F003 | AHG ATELIERS HAUTE-G | F0095 |          |          |

  
Jason Lewis  
Vice President of Quality

09/11/14



# ATELIERS DE LA HAUTE-GARONNE

Ets AURIOL & Cie - S.A. au capital de 201850 EUR - Z.I. de FLOURENS BP73103 26 route de Lasbordes - 31130 FLOURENS (FRANCE)  
Tél. (33) 5 61 83 60 35 - Fax (33) 5 61 83 95 05 - RCS TOULOUSE B 550 800 528 - SIRET 550 800 528 00014 - APE 2593Z

**PACKING SLIP N° 523605**

of 24/05/2012

P/ 1

Supplier number : **V1088**

|  |  |  |  |
|--|--|--|--|
| DB   | Account N°: <b>3969</b><br>Represent.: <b>08/ MPSI</b> | File N° : <b>UI 10</b><br>Coface N° <b>285101298</b>   | Your P.O. nbr. : <b>OFPN44</b><br>Our ack: <b>260620</b> of 14/02/2012 Invoice N°: <b>523605</b> of 24/05/2012 |
| Shipment to<br><b>B/E AEROSPACE INC</b><br><b>9835 NW 14TH ST</b><br><b>(ORIGIN= FRANCE)</b> |  | Ordered by :<br><b>B/E AEROSPACE INC</b><br><b>P.O. BOX 025263</b>                               |  |
| <b>33172</b><br><b>ETATS UNIS</b><br>Tél: <b>00 1</b>  |  | <b>33102-5263</b><br><b>ETATS UNIS</b><br>Tél: <b>001 305 925 2600</b>                           |  |
| <b>MIAMI</b><br>Fax: <b>001 305 507 7192</b>   |  | <b>MIAMI</b><br>Fax: <b>001 305 507 7191</b>   |  |
| Pre-carriage by : <b>UPS SCS palette &gt;300 kg Lundi</b><br><b>cdessaux@ups.com</b>         |  | Number of packaging : <b>1</b><br>Net weight : <b>45.354 Kg.</b> Gross weight: <b>55.000 Kg.</b> |  |

| ITEM | ORDERED | PART NUMBER | QTY.SHIP. | SCHEDULED | TO BE DELIV. |
|------|---------|-------------|-----------|-----------|--------------|
|------|---------|-------------|-----------|-----------|--------------|

|   |                            |   |   |  |  |
|---|----------------------------|---|---|--|--|
| 1 | 100.000 Lb.<br>18304 Pcs** | AIRCRAFT PARTS<br><b>MS20615-4M20 (3)</b><br>Monel400/NU30/2.4360<br>univ.head marked cham.option<br>No coating roll sorting NASM20615 ed.3 July 03 | Manufactured by AHG - NATO: F0095 - Origin: FRANCE<br><b>100.000 Lb.</b><br>11 JUN 2012<br><b>17863 Pcs**</b> |  |  |
|---|----------------------------|---|---|--|--|

Technical spec: QQ-N-281 class A rev.D

|                                 |                         |
|---------------------------------|-------------------------|
| Lot nb <b>260620 P 001 F001</b> | Qty.: <b>21.000 Lb.</b> |
| Lot nb <b>260620 P 001 F002</b> | Qty.: <b>35.000 Lb.</b> |
| Lot nb <b>260620 P 001 F003</b> | Qty.: <b>23.000 Lb.</b> |
| Lot nb <b>260620 P 001 F004</b> | Qty.: <b>21.000 Lb.</b> |



# ATELIERS DE LA HAUTE-GARONNE

Ets AURIOL & Cie - S.A. au capital de 201850 EUR - Z.I. de FLOURENS BP73103 26 route de Lasbordes - 31130 FLOURENS (FRANCE)  
Tél. (33) 5 61 83 60 35 - Fax (33) 5 61 83 95 05 - RCS TOULOUSE B 550 800 528 - SIRET 550 800 528 00014 - APE 2593Z

## CERTIFICATE of CONFORMITY and TEST REPORT N° A521549

of 16 MAY 2012

ALEX

ACCORDING TO NF L00-15C AND EN10204 TYPE 3.1

Page 1

|  |        |                  |                   |       |
|--|--------|------------------|-------------------|-------|
| Your P.O. nb. :  | OPFN44 | of : 14 FEB 2012 | Supplier number : | V1088 |
| N° ack. :  | 260620 | of : 14 FEB 2012 |                   |       |
| Shipment to : (or notify party)<br>B/E AEROSPACE INC<br>9835 NW 14TH ST<br>(ORIGIN= FRANCE)<br><br>33172 MIAMI<br>ETATS UNIS |        |                  |                   |       |

| ITEM                                    | ORDERED     | PART NUMBER   | SHIPPED                   |
|---|-------------|---|---------------------------|
| 1                                       | 100.000 Lb. | MS20615-4M20 (3)<br>Monel400/NU30/2.4360<br>univ.head marked cham.optio roll sorting<br>No coating NASM20615 ed.3 July 03 | 23.000 Lb.<br>4105 Pcs ** |
| Technical spec : QQ-N-281 class A rev.D |             |   |                           |

Lot nb 260620 P001 F003 Qty.: 23.000 Lb. AHG Wire lot nb.: 195677 Material heat nb.: 63061  
NATO Cod : F0095 Origin: France  
Manufacture heading date: 09 MAY 2012 Material Producer : DN

| Cis./Shear strength 08-058MO | double(D)/simple(S): |                    | Mini  | Maxi  | Value | Unit | Test# |
|------------------------------|----------------------|--------------------|-------|-------|-------|------|-------|
|                              | D Rc/shear strength  |                    | 49.00 | 59.00 | 55.61 | KSI  | 5     |
|                              | D Rc/shear strength  |                    | 49.00 | 59.00 | 54.16 | KSI  |       |
|                              | D Rc/shear strength  |                    | 49.00 | 59.00 | 53.89 | KSI  |       |
|                              | D Rc/shear strength  |                    | 49.00 | 59.00 | 53.53 | KSI  |       |
|                              | D Rc/shear strength  |                    | 49.00 | 59.00 | 53.50 | KSI  |       |
| Ecrasement/Driveability      | conforme: O/N        | O defaults/defects |       | 0.00  | 0.00  |      | 5     |

|         |         |         |          |         |         |          |         |         |         |         |
|---------|---------|---------|----------|---------|---------|----------|---------|---------|---------|---------|
| AL      | C       | CO      | CU       | FE      | MN      | NI + CO  | P       | PB      | S       | SI      |
| 0,00500 | 0,09800 | 0,02000 | 33,46000 | 1,62000 | 0,92000 | 63,79000 | 0,00000 | 0,00000 | 0,00100 | 0,06000 |
| SN      | TI      | ZN      | ZN+SN+PB |         |         |          |         |         |         | NI      |
| 0,00000 | 0,00000 | 0,00000 | 0,00000  |         |         |          |         |         |         | BALANCE |

OUR AIRBUS SAS APPROVAL NUMBER IS : 30030 of 31 August 2007  
OUR BAE SYSTEMS APPROVAL LETTER REFERENCE IS : ACO/A/LT/JJH/3035

Item 1 to be continued

./..



# ATELIERS DE LA HAUTE-GARONNE

Ets AURIOL & Cie - S.A. au capital de 201850 EUR - Z.I. de FLOURENS BP73103 26 route de Lasbordes - 31130 FLOURENS (FRANCE)  
Tél. (33) 5 61 83 60 35 - Fax (33) 5 61 83 95 05 - RCS TOULOUSE B 550 800 528 - SIRET 550 800 528 00014 - APE 2593Z

## CERTIFICATE of CONFORMITY and TEST REPORT N° A521549

of 16 MAY 2012

ALEX

ACCORDING TO NF L 00-15C AND EN10204 TYPE 3.1

Page 2

|                 |        |                  |                   |       |
|-----------------|--------|------------------|-------------------|-------|
| Your P.O. nb. : | OFPN44 | of : 14 FEB 2012 | Supplier number : | V1088 |
| N° ack. :       | 260620 | of : 14 FEB 2012 |                   |       |

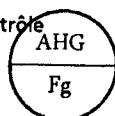
| ITEM   | ORDERED      | PART NUMBER      | SHIPPED |
|--------|--------------|------------------|---------|
| Item 1 | Continuation | MS20615-4M20 (3) |         |

Parts manufactured by AHG and delivered under this CofC are DFARS compliant per DFAR 252.225-7009  
We hereby declare, subject to exceptions, reservations, or concessions listed in this statement of conformity, that the listed supplies comply with the contract requirements and that, after completion of testing and verification, they satisfy in every respect all specified requirements and applicable standards and regulations.

SUPPLIER'S INSPECTION 16 MAY 2012

NAME AND FUNCTION

Gilles GUISET CTLF Chef Service Contrôle  
Computer controlled signature



VISA DGAC

\*\* Estimated quantity

Signataire habilité

Agrément JAR 21 DGAC FG097

--- TRUE COPY CERTIFICATION ---



**DEUTSCHE NICKEL GMBH**

Rosenweg 15, 58239 Schwerte, Germany

**Certificat de Réception**  
**EN 10204 - 3.1**

No.: 1217 / 2012

ATELIERS DE LA HAUTE GARONNE  
ETS AURIOL & CIE  
ZI FLOURENS  
F - 31131 BALMANo. de la Commande:  
113722MPRVNo. de la Confirmation:  
80133201 / 3

Matériel: Silverin 400

No. de mat.: 2.4360

Demi-produits: fil

Dimension: dia. 3,120 mm

Spécification: SFT/MO Rev.E du 12.1.2011

État de livraison: étire à froid, recuit, qualité rivet

Poids-net:  
232,50 kgNombre des Pièces:  
1 caisseCoulée-No.:  
63061**RÉSULTAT DE MESURE**

Composition chimique (% de masse):

|             |             |             |            |            |            |             |
|-------------|-------------|-------------|------------|------------|------------|-------------|
| Al<br>0,005 | Co<br>0,02  | Cu<br>33,45 | C<br>0,098 | Fe<br>1,62 | Mn<br>0,92 | Si<br>0,060 |
| S<br>0,0010 | Ni<br>63,77 |             |            |            |            |             |

Résistance à la traction [MPa]

587 - 593

Résistance au cisaillement [MPa]

368 - 370

Allongement à la rupture AL=50 [%]

37,0 - 41,0

Grosseur du grain ASTM E112

10,0

defect de surface, max. profondeur (µm)

8

Notre système d'assurance qualité est homologué sous le numéro 922141 chez Lloyd's Register Quality Assurance

Schwerte, 02.04.2012

L'expert



# B/E Aerospace, Inc.

Page: 1 of 1

## CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


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The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO25711**

| LINE# | QUANTITY | U/M | PART-NUMBER | CUST REF# | LOT-NUMBER | MANUFACTURER  | CCODE | MFR DATE | EXP DATE |
|-------|----------|-----|-------------|-----------|------------|---------------|-------|----------|----------|
| 1     | 100      | EA  | AN3C12A     |           | 66623      | MAC FASTENERS | ORPT4 |          |          |

  
Jason Lewis  
Vice President of Quality

09/11/14

1000475895

SH UK  
07

1000475898

**AVIBANK**  
**MFG. INC.**

SPS FASTENERS DIVISION, A PCC COMPANY

11500 SHERMAN WAY • NORTH HOLLYWOOD, CA 91605

PHONE: (818) 392-2100 • FAX: (818) 255-2094

No ozone depleting substances used in processes.

## PACKING SLIP

SHIPPER

DATE SHIPPED

06/01/12

| PAGE | OF | DATE ENTERED | SALES ORDER NO. |
|------|----|--------------|-----------------|
| 1    | 1  | 04/30/12     | 579183-6698     |

B 111227  
 I B/E AEROSPACE CONSUMABLES MGMT  
 L SHOREHAM AIRPORT, SHOREHAM BY  
 L SEA, WEST SUSSEX BN43 5FN  
 T ENGLAND,  
 O ENGLAND

S DHL DANZAS AIR & OCEAN, UK  
 H 4000 REDONDO BEACH AVENUE  
 I STE 103  
 P  
 T REDONDO BEACH, CA  
 O 90278

|                    |  |      |  |                 |  |                 |  |                   |  |                  |  |          |  |                    |  |        |  |              |  |
|--------------------|--|------|--|-----------------|--|-----------------|--|-------------------|--|------------------|--|----------|--|--------------------|--|--------|--|--------------|--|
| CUSTOMER ORDER NO. |  |      |  | CONTRACT NUMBER |  |                 |  | RATING            |  | ORDERED BY       |  | REC'D BY |  | TERRITORY NO.      |  |        |  |              |  |
| 4500120238         |  |      |  |                 |  |                 |  |                   |  | EMMA PARKER      |  | GLE      |  | 339                |  |        |  |              |  |
| P/S                |  | CERT |  | INV             |  | DD 250<br>REQ'D |  | PRES PKG<br>REQ'D |  | RESALE<br>OR TAX |  | VAR %    |  | TYPE OF INSPECTION |  | TERMS  |  | FREIGHT      |  |
| 1                  |  | 3    |  | 3               |  | 9               |  | N                 |  | N                |  | R        |  |                    |  | NET 60 |  | NOHO/COLLECT |  |

SHIPPED VIA

UPS SURFACE

| ITEM NO.  | NO. SHIPPED | UNITS    | PART NUMBER / DESCRIPTION  | NO. BACKORDERED     |              |        |
|-----------|-------------|----------|--|---------------------|--------------|--------|
| 10        | 100         | E        | PAYABLE IN U.S. DOLLARS-\$<br>UPS ACCT#R2W459<br>(DHL DANZAS AIR & OCEAN-FOR P/U: 310-216-6600)<br>WESTLAND QRS01<br>BLC4BA12S<br>MS17984C412<br>SHIP#: 1 QTY : 97 LOT:1251136 DUE :<br>AREA : AISLE : SEC: SHELF<br>SHIP#: 1 QTY : 3 LOT:1251136A DUE :<br>AREA : AISLE : SEC: SHELF<br><br>TO OUR VALUED CUSTOMERS<br>A RETURN MATERIAL AUTHORIZATION<br>(RMA) NUMBER IS REQUIRED FOR ALL<br>PRODUCTS RETURNED TO AVIBANK<br>TO REQUEST A RMA NUMBER CONTACT<br>YOUR AVIBANK SALES ASSOCIATE AT<br>818/392-2100<br><br>THESE COMMODITIES WERE EXPORTED<br>FROM AVIBANK MFG., INC. IN<br>ACCORDANCE WITH EXPORT ADMINISTRATION<br>REGULATIONS OR INTERNATIONAL TRAFFIC<br>IN ARMS REGULATIONS. DIVERSION CONTRARY<br>TO U.S. LAW IS PROHIBITED. | 0                   |              |        |
| PULLED BY | SHIPPED BY  | SHIP VIA | DATE SHIPPED   | WAYBILL/OTHER INFO. | NO. OF PKGS. | WEIGHT |
|           | MC          | UPS      | 6/2/12   |                     | 1            |        |

NOTICE - IF INVOICE IS NOT RECEIVED WITHIN 10 DAYS OF SHIPMENT, PLEASE NOTIFY US IMMEDIATELY.

ANY CLAIM SHORTAGES OR ADJUSTMENTS MUST BE MADE WITHIN 10 DAYS FROM RECEIPT OF GOODS. "WE HEREBY CERTIFY THAT THESE GOODS WERE PRODUCED IN COMPLIANCE WITH ALL APPLICABLE REQUIREMENTS OF SECTIONS 6, 7, & 12 OF THE FAIR LABOR STANDARDS ACT, AS AMENDED, AND OF REGULATIONS AND ORDERS OF THE UNITED STATES DEPARTMENT OF LABOR ISSUED UNDER SECTION 14 THEREOF."

NO OZONE DEPLETING SUBSTANCES USED IN PROCESSES. PARTS ARE MERCURY FREE OF CONTAMINATION.

WI-14-AMS-004 REV:NC

# AVIBANK MFG., INC.

Ball-Lok(R)

A SUBSIDIARY OF SPS TECHNOLOGY, A PCC COMPANY

11500 SHERMAN WAY • NORTH HOLLYWOOD, CA 91605 • PHONE: (818) 392-2100 • FAX: (818) 255-2094

DATE SHIPPED

06/02/12

CUSTOMER PURCHASE ORDER NO.

4500120238

SALES ORDER NO.

579183-6698

**SHIP TO:** DHL DANZAS AIR & OCEAN, UK  
4000 REDONDO BEACH AVENUE  
STE 103

REDONDO BEACH, CA 90278

BOX 1 OF 1

WEIGHT LB

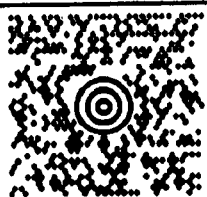
LARRY PANKO  
(818) 392-2100  
AVIBANK MFG, INC.  
11500 SHERMAN WAY  
NORTH HOLLYWOOD CA 91605

5 LBS

1 OF 1

**SHIP TO:**

DHL DANZAS AIR & OCEAN, UK  
STE 103  
4000 REDONDO BEACH AVENUE  
REDONDO BEACH CA 90278

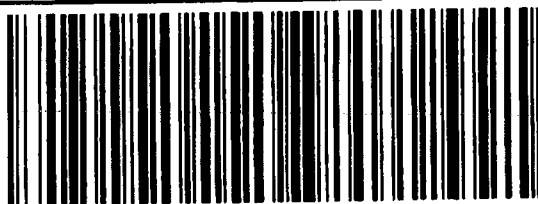


**CA 908 9-03**



**UPS GROUND**

TRACKING #: 1Z 60X 10X 03 4634 0095



BILLING: F/C BILL RECEIVER

REF 1:579183-6698 MC  
REF 2:4500120238

WS 15 0 16 Star TSP800L 27 0A 04/2012



SEE NOTICE ON REVERSE regarding UPS Terms, and notice of limitations of liability. When shipped by air, shippers authorize UPS to act as forwarding agent for export control and customs purposes. If shipped from the US, shippers certify that the commodities, technology or software were exported from the US in accordance with the Export Administration Regulations. Diversion contrary to law is prohibited.

1000475895

SHUK  
07

1000475898

**AV BANK**  
**MFG. INC.**

SPS FASTENERS DIVISION, A PCC COMPANY

11500 SHERMAN WAY • NORTH HOLLYWOOD, CA 91605

PHONE: (818) 392-2100 • FAX: (818) 255-2094

No ozone depleting substances used in processes.

## PACKING SLIP

SHIPPER

DATE SHIPPED

06/01/12

| PAGE | OF | DATE ENTERED | SALES ORDER NO. |
|------|----|--------------|-----------------|
| 1    | 1  | 04/30/12     | 579183-6698     |

B 111227  
 I B/E AEROSPACE CONSUMABLES MGMT  
 L SHOREHAM AIRPORT, SHOREHAM BY  
 L SEA, WEST SUSSEX BN43 5FN  
 T ENGLAND,  
 O ENGLAND

S DHL DANZAS AIR & OCEAN, UK  
 H 4000 REDONDO BEACH AVENUE  
 I STE 103  
 P  
 T REDONDO BEACH, CA  
 O 90278

|                    |     |      |     |                 |                   |                  |                 |                    |  |        |        |             |  |              |  |               |  |
|--------------------|-----|------|-----|-----------------|-------------------|------------------|-----------------|--------------------|--|--------|--------|-------------|--|--------------|--|---------------|--|
| CUSTOMER ORDER NO. |     |      |     |                 |                   |                  | CONTRACT NUMBER |                    |  | RATING |        | ORDERED BY  |  | REC'D BY     |  | TERRITORY NO. |  |
| 4500120238         |     |      |     |                 |                   |                  |                 |                    |  |        |        | EMMA PARKER |  | GLE          |  | 339           |  |
| 1                  | P/S | CERT | INV | DD 250<br>REQ'D | PRES PKG<br>REQ'D | RESALE<br>OR TAX | VAR %           | TYPE OF INSPECTION |  |        | TERMS  |             |  | FREIGHT      |  |               |  |
| 1                  | 3   | 3    | 9   | N               | N                 | R                |                 |                    |  |        | NET 60 |             |  | NOHO/COLLECT |  |               |  |

SHIPPED VIA

UPS SURFACE

| ITEM NO.  | NO. SHIPPED | UNITS    | PART NUMBER / DESCRIPTION  | NO.<br>BACKORDERED  |              |        |
|-----------|-------------|----------|--|---------------------|--------------|--------|
| 10        | 100         | E        | PAYABLE IN U.S. DOLLARS-\$<br>UPS ACCT#R2W459<br>(DHL DANZAS AIR & OCEAN-FOR P/U: 310-216-6600)<br>WESTLAND QRS01<br>BLC4BA12S<br>MS17984C412<br>SHIP#: 1 QTY : 97 LOT:1251136 DUE :<br>AREA : AISLE : SEC: SHELF<br>SHIP#: 1 QTY : 3 LOT:1251136A DUE :<br>AREA : AISLE : SEC: SHELF<br><br>TO OUR VALUED CUSTOMERS<br>A RETURN MATERIAL AUTHORIZATION<br>(RMA) NUMBER IS REQUIRED FOR ALL<br>PRODUCTS RETURNED TO AVIBANK<br>TO REQUEST A RMA NUMBER CONTACT<br>YOUR AVIBANK SALES ASSOCIATE AT<br>818/392-2100<br><br>THESE COMMODITIES WERE EXPORTED<br>FROM AVIBANK MFG., INC. IN<br>ACCORDANCE WITH EXPORT ADMINISTRATION<br>REGULATIONS OR INTERNATIONAL TRAFFIC<br>IN ARMS REGULATIONS. DIVERSION CONTRARY<br>TO U.S. LAW IS PROHIBITED. | 0                   |              |        |
| PULLED BY | SHIPPED BY  | SHIP VIA | DATE SHIPPED   | WAYBILL/OTHER INFO. | NO. OF PKGS. | WEIGHT |
|           | Mc          | UPS      | 6/13/12  |                     | 1            |        |

NOTICE - IF INVOICE IS NOT RECEIVED WITHIN 10 DAYS OF SHIPMENT, PLEASE NOTIFY US IMMEDIATELY.

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NO OZONE DEPLETING SUBSTANCES USED IN PROCESSES. PARTS ARE MERCURY FREE OF CONTAMINATION.

WI-14-AMS-004 REV:NC

# AVIBANK MFG., INC.

Ball-Lok(R)

A SUBSIDIARY OF SPS TECHNOLOGY, A PCC COMPANY

11500 SHERMAN WAY • NORTH HOLLYWOOD, CA 91605 • PHONE: (818) 392-2100 • FAX: (818) 255-2094

DATE SHIPPED

06/02/12

CUSTOMER PURCHASE ORDER NO.

4500120238

SALES ORDER NO.

579183-6698

**SHIP TO:** DHL DANZAS AIR & OCEAN, UK  
4000 REDONDO BEACH AVENUE  
STE 103

REDONDO BEACH, CA 90278

BOX 1 OF 1

WEIGHT

LB

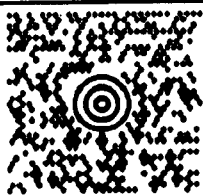
LARRY PANKO  
(818) 392-2100  
AVIBANK MFG. INC.  
11500 SHERMAN WAY  
NORTH HOLLYWOOD CA 91605

5 LBS

1 OF 1

**SHIP TO:**

DHL DANZAS AIR & OCEAN, UK  
STE 103  
4000 REDONDO BEACH AVENUE  
REDONDO BEACH CA 90278

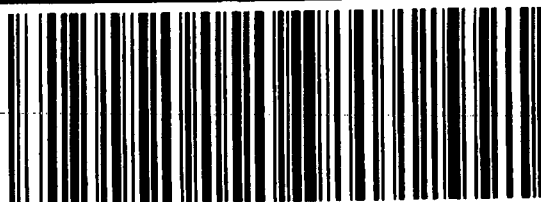


**CA 908 9-03**



**UPS GROUND**

TRACKING #: 1Z 60X 10X 03 4634 0095



BILLING: F/C BILL RECEIVER

REF 1:579183-6698 MC  
REF 2:4500120238

WS 15 0 16 Star TSP80DL 27 0A 04/2012



SEE NOTICE ON REVERSE regarding UPS terms, and notice of limitation of liability. Where allowed by law, shippers authorize UPS to act as forwarding agent for export control and customs purposes. If exported from the US, shippers certify that the commodities, technology or software items reported from the US in accordance with the Export Administration Regulations. Shippers certify to law to provisions.



**AVIBANK**  
AEROSTRUCTURES DIVISION, A PCC COMPANY

11500 SHERMAN WAY • NORTH HOLLYWOOD, CA 91605

PHONE: (818) 392-2100 • FAX: (818) 255-2094

No ozone depleting substances used in process

**CERTIFICATE OF CONFORMANCE**

DATE SHIPPED  
06/02/12

| PAGE | OF | DATE ENTERED | SALES ORDER NO. |
|------|----|--------------|-----------------|
| 1    | 1  | 04/30/12     | 579183-6698     |

**BILL TO**

111227  
B/E AEROSPACE, INC (UK)  
10000 NW 15TH TERRACE  
  
MIAMI, FL  
USA 33172

**SHIP TO**

DHL DANZAS AIR & OCEAN, UK  
4000 REDONDO BEACH AVENUE  
STE 103  
  
REDONDO BEACH, CA 90278

| CUSTOMER ORDER NO. |      |     |             | CONTRACT NUMBER |               |       |                    | RATING | ORDERED BY   | REC'D BY | TERRITORY NO. |
|--------------------|------|-----|-------------|-----------------|---------------|-------|--------------------|--------|--------------|----------|---------------|
| 4500120238         |      |     |             |                 |               |       |                    |        | EMMA PARKER  | GLE      | 339           |
| P/S                | CERT | INV | DO 250 RECD | RES PCK RECD    | RESALE OR TAX | VAR % | TYPE OF INSPECTION | TERMS  | FREIGHT      |          |               |
| 1                  | 3    | 3   | 9           | N               | N             | R     |                    | NET 60 | NOHO/COLLECT |          |               |

| SHIPPED VIA |  | PART NUMBER/DESCRIPTION |  |
|-------------|--|-------------------------|--|
| UPS SURFACE |  | 1Z60X10X0346340095      |  |

| ITEM NO.  | NO. ORDERED | UNITS      | PART NUMBER/DESCRIPTION   | NO. BACKORDERED    |
|---|-------------|------------|---|--------------------|
| 10  | 100         | E          | <p>PAYABLE IN U.S. DOLLARS-\$<br/>UPS ACCT#R2W459<br/>(DHL DANZAS AIR &amp; OCEAN-FOR P/U: 310-216-6600)<br/>WESTLAND QRS01<br/>BLC4BA12S<br/>MS17984C412<br/>SHIP#: 1 QTY : 97 LOT:1251136<br/>AREA : AISLE : SEC :<br/>SHIP#: 1 QTY : 3 LOT:1251136A<br/>AREA : AISLE : SEC :</p> <p>TO OUR VALUED CUSTOMERS<br/>A RETURN MATERIAL AUTHORIZATION<br/>(RMA) NUMBER IS REQUIRED FOR ALL<br/>PRODUCTS RETURNED TO AVIBANK<br/>TO REQUEST A RMA NUMBER CONTACT<br/>YOUR AVIBANK SALES ASSOCIATE AT<br/>818/392-2100</p> <p>THESE COMMODITIES WERE EXPORTED<br/>FROM AVIBANK MFG., INC. IN<br/>ACCORDANCE WITH EXPORT ADMINISTRATION<br/>REGULATIONS OR INTERNATIONAL TRAFFIC<br/>IN ARMS REGULATIONS. DIVERSION CONTRARY<br/>TO U.S. LAW IS PROHIBITED.</p> | 0                  |
| <p>WE HEREBY CERTIFY THAT ALL MATERIALS USED IN THE MANUFACTURE OF PARTS COVERED BY THIS REPORT CONFORM TO THE MATERIAL SPECIFICATIONS CALLED FOR BY THE ABOVE PURCHASE ORDER.<br/>WE FURTHER CERTIFY THAT THE PARTS ARE MANUFACTURED IN ACCORDANCE WITH APPLICABLE DRAWINGS OR SPECIFICATIONS CURRENT ON THE DATE ON WHICH THE ORDER WAS PLACED. TEST REPORTS COVERING MATERIALS IN THESE PARTS, AND INDICATING CONFORMANCE WITH APPLICABLE SPECIFICATIONS, ARE ON FILE AND SUBJECT TO EXAMINATION.</p> <p>AVIBANK MFG., INC. WI-14-AMS-004 REV:NC</p> |             |            |   |                    |
| PULLED BY   |             | SHIPPED BY |   | DATE SHIPPED       |
|   |             | SHIP VIA   |   | WAYBILL/OTHER INFO |
|   |             |            |   | NO. OF PKGS.       |
|   |             |            |   | WEIGHT             |

WE HEREBY CERTIFY THAT ALL MATERIALS USED IN THE MANUFACTURE OF PARTS COVERED BY THIS REPORT CONFORM TO THE MATERIAL SPECIFICATIONS CALLED FOR BY THE ABOVE PURCHASE ORDER.  
WE FURTHER CERTIFY THAT THE PARTS ARE MANUFACTURED IN ACCORDANCE WITH APPLICABLE DRAWINGS OR SPECIFICATIONS CURRENT ON THE DATE ON WHICH THE ORDER WAS PLACED. TEST REPORTS COVERING MATERIALS IN THESE PARTS, AND INDICATING CONFORMANCE WITH APPLICABLE SPECIFICATIONS, ARE ON FILE AND SUBJECT TO EXAMINATION.

AVIBANK MFG., INC. WI-14-AMS-004 REV:NC

BY: *[Signature]*  
AUTHORIZED QUALITY CONTROL REPRESENTATIVE



# B/E Aerospace, Inc.

Page: 1 of 1

## CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.beconsumables.com

Shipped From: B/E AEROSPACE, CHARLES AVENUE, BURGESS HILL, WEST SUSSEX RH15 9UF, UK


### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO25711**

| LINE# | QUANTITY | U/M | PART-NUMBER | CUST REF# | LOT-NUMBER | MANUFACTURER | CCODE | MFR DATE | EXP DATE |
|-------|----------|-----|-------------|-----------|------------|--------------|-------|----------|----------|
| 5     | 4        | EA  | MS17984C412 |           | 1251136    | AVIBANK MFG. | 84256 |          |          |

  
Jason Lewis  
Vice President of Quality

09/11/14



09/11/14

## CUSTOMS INVOICE/PACKING SHEET



4129142-00

Cust#: 41513

SOLD TO: B/E AEROSPACE  
CONSUMABLES MANAGEMENTATTN LESLIE MENIEUR  
USBy receiving delivery of the items covered by this packing slip, buyer agrees to the terms and conditions of sale at:  
[www.beconsumables.com/cm/docs/BE\\_CM\\_Conditions\\_of\\_Sale.pdf](http://www.beconsumables.com/cm/docs/BE_CM_Conditions_of_Sale.pdf)

SHIP TO: DART AEROSPACE LTD

1270 ABERDEEN ST

HAWKESBURY, CA K6A 1K7

Pref. Routing A.O.G.: FEDX INTL P1 COLL

CORRESPONDENCE TO:

B/E AEROSPACE  
CONSUMABLES MANAGEMENT  
10000 N.W. 15th Terrace

Miami, FL 33172

| UPC VENDOR    | INVOICE NO. | ON DOCK          |
|---------------|-------------|------------------|
| 000000        | HW6497      | 09/11/14         |
| PROMISED      | REQUEST     | SHIPPED          |
| 09/11/14      | 09/11/14    |                  |
| CUSTOMER P.O. |             | CUSTOMER RELEASE |
| P025711       |             | 985TV7           |

| P.O. NUMBER | ITEM NO. | PART NUMBER  | ICN No. | QTY          | UOM | UNIT PRICE | TOTAL VALUE | COUNTRY OF ORIGIN | QUANTITY ORDERED | QUANTITY B.O. | QUANTITY SHIPPED |
|-------------|----------|--|---------|--------------|-----|------------|-------------|-------------------|------------------|---------------|------------------|
| OZYJ126     | 20       | NAS1611-013  |         | 100.00       | EA  | 0.35       | 35.00       |                   | 100.00           | 0.00          | 100.00           |
|             |          | Desc: PACKING<br>PCAT: S<br>HS# 4016.93.0000<br><br>366238<br>MFR- Name: INTERNATIONAL SEAL - FNGP<br>MFR-Product: 62AS568-013 E454<br>Revision: 11<br>MFR- Batch: NMCE18<br>IT IS HEREBY CERTIFIED THAT THE ITEM IDENTIFIED HEREIN<br>CONFORMS TO AN ESTABLISHED INDUSTRY, U.S. GOVERNMENT, OR<br>COMMERCIAL STANDARD. PARTS ARE BEING SHIPPED BY KAPCO ON<br>BEHALF OF BE AEROSPACE CONSUMABLES MANAGEMENT.<br>S/L: UNLTD ARP5316<br>INSP BY: Jose U. Murillo 09/11/2014 | 100.00  | Cure: 1Q2014 | US  |            |             |                   |                  |               |                  |

The merchandise listed has been produced in accordance with Fair Labor Standards Act of 1938 as amended.  
 No claims allowed unless made within ten (10) days after receipts of Goods and in no case shall the liability  
 assumed by us under the guarantees either expressed or implied, exceed the face value of the invoice for the  
 merchandise in question.

These commodities, technology or software were exported from the United States in accordance with the  
 Export Administration Regulations. Diversion contrary to U.S. Law is prohibited.

SHIPPED UNDER NLR HS#8803.30.0010 - ECCN: 9A991.D

COUNTRY OF ORIGIN: USA

TOTAL BOX VALUE:

35.00 USD

PAGE 1

FOR CUSTOMS PURPOSES ONLY. DO NOT PAY FROM THIS DOCUMENT.



## CERTIFICATE OF CONFORMANCE

WE HEREBY CERTIFY THAT THE PRODUCT SUPPLIED IS NEWLY MANUFACTURED, CONFORMS TO THE  
 APPROVED DESIGN DATA, AND MEETS ALL REQUIREMENTS OF THE APPLICABLE PURCHASE ORDER.  
 EVIDENCE OF CONFORMANCE IS ON FILE AND AVAILABLE FOR REVIEW UPON REQUEST.

PETE CURTI  
 CORPORATE VICE PRESIDENT OF QUALITY

Thank You For This Order  
 PACKING LIST

## ----- CERTIFICATE OF CONFORMANCE -----

TO: KAPCO  
3120 E. ENTERPRISE STREET  
BREA, CA 92821

Cust. PO NO: 371562-00

Contract NO:  
S/O Number: 06286479

Specification : NAS 1613 Rev 2

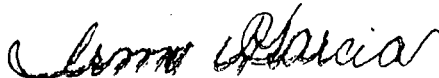
| L#  | Our Part Number/Customer P/N    | Quantity                     | Batch  | Cure |
|-----|---------------------------------|------------------------------|--------|------|
| 006 | 62AS568-013 E458<br>NAS1611-013 | 889.00<br>NAS1611-013 REV 11 | NMCE18 | 1Q14 |

| Test Description  | Test Results | Requirements |
|---|--------------|--------------|
| Examination of Product (AS871TD)  | Pass         |              |
| Fluid Immersion, Skydrol 500B4; 70 hrs @ 160F; ASTM D471:<br>Volume Change, % | 1            | 0 To 8       |
| Specific Gravity<br>ASTM D297   | 1.2          | 1.18 To 1.22 |
| Hardness, Durometer M; Unsoaked Condition                                     | 82           | 75 To 85     |

This is to certify that the above parts were made in conformity with the specification listed, and that the above test results were obtained. This report shall not be reproduced, except in full, without the written approval of ISC-FNST laboratory. Furnished material is Mercury free. Storage Conditions, Age Control, and Maximum Storage Life (shelf life and expiration date) per ARP5316.

\*\*\*Country of Origin is USA\*\*\*

Signed:



Title : Quality Assurance Representative  
Date : 03/04/14

KAPCO ICN

366238



THIS IS A COPY OF THE ORIGINAL  
CERTIFICATION AS DELIVERED  
TO KAPCO



# B/E Aerospace, Inc.

Page: 1 of 1

## CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172

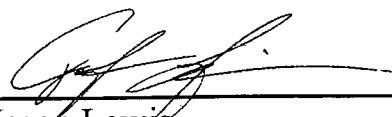
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The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

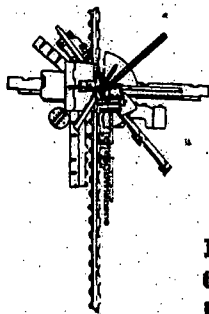
**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO25711**

| LINE# | QUANTITY | U/M | PART-NUMBER    | CUST REF# | LOT-NUMBER | MANUFACTURER | CCODE | MFR DATE | EXP DATE |
|-------|----------|-----|----------------|-----------|------------|--------------|-------|----------|----------|
| 7     | 10       | EA  | MS20257-3-7200 |           | 76419      | LA DEAU MFG  |       | 06192    |          |

  
\_\_\_\_\_  
Jason Lewis  
Vice President of Quality

09/11/14



# LaDequ

MANUFACTURING CORPORATION

# PACKING SLIP

**ISO 9001:2008 CERTIFIED**  
TÜV-USA Quality Systems

DATE \_\_\_\_\_

**JAN 17, 2014**

637 West Colorado Street, Glendale, California 91204

**Tel: 818-240-3990**

**Fax: 818-240-1219**

email: ladeaumfg@gmail.com

BILL TO

B/E AEROSPACE, INC.  
CONSUMABLES MANAGEMENT  
P.O. BOX 025263  
MIAMI FL 33102

CONSIGNEE TO AND DESTINATION

B/E AEROSPACE  
CONSUMABLES MANAGEMENT  
9835 NW 14TH ST  
MIAMI FL 33172

ROUTE

**FEDEX/FREIGHT/COLL**

PURCHASE ORDER #

OTAH43

**QUANTITY**

### DESCRIPTION

UNIT

AMOUNT

SHIPPER NO.:

1000

44-38861-20257-3-7200

REF: COMPLIES WITH DFAR  
252.225-7009

**1**

**CHEM & PHYS CERT**

REF: RELEASE#K3EYOTAH43

**A-42226**

084850

## IMPORTANT:

**SHIPPER NOT RESPONSIBLE  
FOR DISCREPANCIES UNLESS  
REPORTED WITHIN  
15 DAYS OF RECEIPT**

RECEIVED BY:

# PACKING LIST

TOTAL &gt;&gt;

LOT #

C 76419, C 76420,

01/17/14

## MAKE-UP

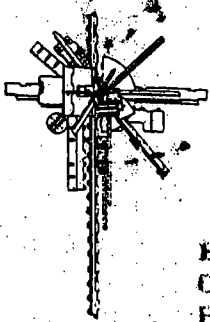
# STOCK

**AUTHORIZED AGENT**

FORM 4.15-1 7/98

**SHIPPED FROM:** LaDeau Manufacturing Corporation, 637 West Colorado Street, Glendale, CA 91204 Tel: (818) 240-3990

CERTIFICATE OF CONFORMANCE



**LaDeau**

MANUFACTURING CORPORATION

ISO 9001:2008 CERTIFIED  
TUV-USA Quality Systems

DATE

JAN 17, 2014

637 West Colorado Street, Glendale, California 91204

Tel: 818-240-3990

Fax: 818-240-1219

email: ladeaumfg@gmail.com

BILL TO

B/E AEROSPACE, INC.  
CONSUMABLES MANAGEMENT  
P.O. BOX 025263  
MIAMI FL 33102

CONSIGNEE TO AND DESTINATION

B/E AEROSPACE  
CONSUMABLES MANAGEMENT  
9835 NW 14TH ST  
MIAMI FL 33172

ROUTE

FEDEX/FREIGHT/COLL  
ACCM(018757)

PURCHASE ORDER #

01AH43

QUANTITY

DESCRIPTION

1000

MS20257-3-7200

REF: COMPLIES WITH DFAR  
252.225-7009

1

CHEM & PHYS CERT  
REF: RELEASE HKSEYOTAH43

SHIPPER NO.:

A-42226

084850

**IMPORTANT:**

SHIPPER NOT RESPONSIBLE  
FOR DISCREPANCIES UNLESS  
REPORTED WITHIN  
15 DAYS OF RECEIPT

RECEIVED BY:

TOTAL >>

LOT #

76419, C 76420

01/17/14

MAKE-UP ☒

STOCK ☐

AUTHORIZED AGENT

FORM 4.15-1 7/00

LaDeau mfg. confirms that all materials furnished hereby are represented to conform to the drawing and/or specification detailed on the purchase. Test reports covering the material used in the manufacture of these items are on file and indicate conformance with applicable specification requirements. These reports are available for review.

*Vanessa J. Conway* Q.A. Manager

**Tensile Properties of Al & Mg Alloys**

Specimen ID 69730-1

Test Number 412

Report Number 412

Test Date 10/3/2013 11:02:27 AM

| <u>Test Results</u> |            |
|---------------------|------------|
| Width (in)          | 0.498      |
| Thickness (in)      | 0.041      |
| Area (in)           | 0.0203     |
| Yield (lbs)         | 579        |
| Yield (kpsi)        | 28.57      |
| Tensile (kpsi)      | 34.44      |
| Tensile (lbs)       | 698        |
| Total Elong (%)     | 8.67       |
| Modulus (psi)       | 10,079,660 |

Country of Origin: USA  
Stress (Lbs / Inches<sup>2</sup>) vs Extension (%)



**LaDeau**  
MANUFACTURING CORPORATION

PO#: 07AH43  
P/N: MIS 20257-3-720  
SHIPPER: A42226  
DATE: 01-17-2014  
LOT#: 76419

Testing Machine STM-100KN 0813547

Load Cell S/N (IF1459395), Units (LBS.) 22480

Crosshead Speed (Inches / min) or Rate 0.5

Extension or Position Measured by EZ1-2 (5426)

By: DWS Date: 10-3-13

Customer Name Ladeau  
Shop Order No. 69730-1  
Conductivity

Customer PO No. K24712  
Coil ID No. 500398-2

Operator Jeff  
Temper H34

Heat No./Furnace No. F1/#6

Template No 108 03-Oct-13  
Aleris Rolled Products

Cut Width 24

Alloy 5052  
Order Gauge 0.04

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STEEL & WIRE

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03/28/13

ISW Order/Invoice Number: 147706-00

SOLD TO: L0590  
LA DEAU MFG. COMPANY  
637 W. COLORADO STREET

SHIP TO: L0590  
LA DEAU MFG. COMPANY  
637 W. COLORADO STREET

GLENDALÉ CA 91209

GLENDALÉ CA 91209

CUSTOMER PO: J24440



0880SSBT

.0880"302 STAINL SPEC DIA N/M CNT CLS

WEIGHT: 3125

HEAT NUMBER: FOM9

#### CHEMISTRIES

|      |       |      |      |      |        |       |      |
|------|-------|------|------|------|--------|-------|------|
| C    | Mn    | P    | S    | Si   | Cr     | Ni    | N    |
| .069 | 1.020 | .034 | .001 | .370 | 18.150 | 8.020 | .061 |
| Mo   | Cu    |      |      |      |        |       |      |
| .300 | .420  |      |      |      |        |       |      |

#### PHYSICAL PROPERTIES

TENSILE: 256933 256933

TORSIONS:

ROCKWELL #1:

BENDS:

ROCKWELL #2:

SALT SPRAY HOURS:

YIELD STRENGTH: 000000/000000

COATING WEIGHT:

ELONGATION:

GRAIN SIZE:

REDUCTION OF AREA:

\*\*\*\* MERCURY FREE \*\*\*\*

\*\*\* SPECIFICATIONS \*\*\*

ASTM A313-10

AMS 5688-1

SAE J230-94

**LaDeau**

MANUFACTURING CORPORATION

PO#:

P/N: NIS 20257-3-7200

SHIPPER: 742226

DATE: 01-17-2014

LOT#: 76419

MELT: US UNITED STATES

ORIG: US UNITED STATES

MILL: INDUSTRIAL ALLOYS

DFAR: Y

ROHS: Y

  
Rey Domingo, Quality Control Manager

The values and specifications herein are passed through from the manufacturer directly to the customer.

Please see reverse side or www.industeel.com for all Terms and Conditions of Sale.

Material Properties Sheet 70403-MPS Version 1 Approved by BF 11/20/12